

**NEW HAMPSHIRE  
ESTUARIES PROJECT**

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**Regulation and Management  
of New Hampshire Estuaries:  
A Base Programs Analysis**

**October 2000**



# **Regulation and Management of New Hampshire Estuaries**

## ***A Base Programs Analysis***

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A Report to the  
New Hampshire Estuaries Project

Submitted by:  
New Hampshire Department of Fish and Game  
and  
Great Bay National Estuarine Research Reserve

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***October, 1999***

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# Acknowledgements

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## **New Hampshire Estuaries Project**

**State of New Hampshire**

**Office of State Planning**

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# Executive Summary

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*NHEP Management Plan*

**Non-point Source Pollution**

- ***Improve regulatory approach and/or state funding of non-point source programs***
- ***Continue to evaluate and revise Best Management Practices***

- ***Improve local regulation of stormwater and erosion control***

e standards of the Green Book by reference, as the state recommends, municipalities can avoid having to update their ordinances frequently. Pooper-scooper laws, hazardous waste collection programs, storm drain stenciling, and other programs foster improved runoff quality, but are rarely used. [Actions WQ-9, WQ-10, WQ-19]

- ***Explore ways to improve outreach efforts for local officials***
- ***Work to improve local regulation of development project impacts***
- ***Improve education of shoreland property owners***
- ***Increase land protection through acquisition or conservation easements***
- ***NHEP should work with the state to allow the use of Clean Water State Revolving Loan Fund (SRF) money for activities identified as priorities through the Management Plan***

## **Point Source Pollution**

- ***Develop a coordinated program and funds to identify and resolve illicit connections, infiltration and inflow, leaky collection systems, and similar problems***
- ***Improve local regulations to prevent contamination of stormwater runoff***

- ***Continue investigations into stormwater management technology for improving runoff quality***
- ***Improve training of WWTF operators***

## **Habitat Alteration**

### **Shoreland Development and Riparian Buffers**

- ***Improve implementation and enforcement of Comprehensive Shoreland Protection Act (CSPA)***
- ***Use real estate transfers for outreach about shoreland protection***

### **Wetland Loss and Alteration**

- ***Develop wetlands mitigation policy***
- ***Track impacts to wetlands from permitted and non-permitted activities***
- ***Protect vernal pools***

### **River and Estuary Protection**

- ***Develop a more comprehensive approach to water habitat protection and improve coordination of surface water programs***
- ***Improve coordination of NH DOT projects with agencies that protect natural resources***

### **Open Space and Habitat Protection**

- ***Revive Land Conservation and Investment Program (LCIP)***
- ***Encourage local governments to earmark all of the Current Use change tax penalty for land protection efforts.***

## **Living Resource Management**

### **Finfish Management**

- ***Ensure NH Fish and Game budgets and staff remain sufficient to manage fisheries regardless of fishing effort -***

### **Shellfish Management**

- ***Develop a shellfish program that meets the requirements of the NSSP and provides for adequate management of shellfish resources***
- ***Improve shellfish management coordination***
- ***Identify and mitigate pollution sources***

. Mitigation of these sources will have wide-spread benefits for the estuaries. Federal, state, and

focus more resources on identifying and mitigating pollution sources.  
[Actions SHL-2, SHL-5; WQ-1, WQ-3, WQ-4C, WQ-5, WQ-6, WQ-7, WQ-14]

- ***Educate audiences about illegal shellfish harvesting***
- ***Improve shellfish resource inventories***

## **Endangered Species**

- ***Improve and sustain staffing and resources for protection of rare species***
- ***Improve rare species inventories***

## **Marine Aquaculture**

- ***Determine state commitment to aquaculture development and develop formal state policy***
- ***Provide funding and staff consistent with level of commitment to aquaculture development***

## **Local Management Framework**

- ***Improve resource protection regulations***
- ***Increase outreach to local officials on importance of resource protection regulations***



rather than provided through regional workshops. [Actions LND- 5, LND-25C, LND-20, LND-14, LND-8A, WQ-10]

- ***Improve development review and permit procedures***
- ***Ensure adequate enforcement of land-use regulations in all towns***
- ***Improve outreach for developers and landowners***
- ***Develop long term monitoring of permit conditions***
- ***All construction permits should receive more than one level of local review***
- ***Review variance practices***
- ***Reconsider reliance of NH DES Shoreland Protection Program and other state programs on local governments for enforcement of state regulations***
- ***Consider watershed-based planning agreements***
- ***Examine land-use regulations in the Zone B towns***
- ***Increase the number of circuit-rider planners to improve assistance to towns without planning staff***

h large development projects.



***CHAPTER 1***  
**Introduction**

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**Purpose of the Report**

## **Project Area**

## **How to Use the Report**

## **Report Limitations**

### **PRIORITY PROBLEMS**

**High**

**Medium**

**Low**

***CHAPTER 2***  
**Methodology**

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***CHAPTER 3***  
**Estuary Issues**

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**Microbial Contamination**

**Toxic Contaminants and Heavy Metals**

## **Nutrient Pollution**

## **Sedimentation**



**Hydrologic Changes**

**Living Resources**

**Habitat Loss**

**Priority Problems**

**High**

**Medium**

**Low**

# **Non-Point Source Pollution**

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## **Overview**



## **Stormwater Runoff**

## **Institutional Infrastructure**

**Table 4-1 Protection Program Summary**

<b>Program</b>	<b>Agency</b>	<b>Description</b>
<b>FEDERAL PROGRAMS</b>		
Clean Water Act Nonpoint Source Program (§319)	EPA	Requires states to develop source pollution protection programs in order to qualify for certain federal funds. Program contains requirements overseen by EPA.
Clean Water Act Stormwater NPDES permits	EPA	NPDES (point source) permits required for stormwater discharge pipes for large municipalities.
Clean Water Act §404 Permits	US Army Corps of Engineers	Permits for dredge and fill of wetlands protects stormwater and erosion control functions of wetlands.
Coastal Zone Management Act §6217	NOAA Office of Ocean and Coastal Resource Management	Requires states to develop source control programs for coastal regions in order to qualify for certain federal funds.
Comprehensive Environmental Response Compensation and Liability Act (CERCLA)	EPA	
Resource Conservation and Recovery Act (RCRA)	EPA	Hazardous and solid waste management requirements that include handling and disposal standards.
Stormwater and Erosion Control Programs	USDA Natural Resources Conservation Service	Technical assistance and outreach for stormwater management, particularly for farms.
Clean Water Act Revolving Loan Fund	EPA	Funds for state activities to protect and enhance water quality.
<b>STATE PROGRAMS</b>		
Nonpoint Source Management Plan	NH Dept of Environmental Services	State's CWA nonpoint source plan which includes measures for stormwater.
Coastal Nonpoint Source Management Plan	OSP NH Coastal Program	Nonpoint source pollution control management plan under CZMA §6217
Alteration of Terrain	DES Site Specific Program	Permit program for construction, forestry, and other site disturbance activities that includes requirements for BMPs.
Comprehensive Shoreland Protection Act	DES Shoreland Protection Program	Extends requirements of Site Specific program to smaller disturbances and requires buffers and setbacks in certain shoreland areas.
Dredge and Fill in Wetlands	DES Wetlands Bureau	Permits for dredge and fill of wetlands protects stormwater and erosion control functions of wetlands.
Timber Harvest Regulations	DRED Forest and Land Division, NH Dept. of Revenue Administration	Regulations that require setbacks/buffers and use of BMPs.
Rivers Management and Protection Act	DES Rivers Management and Protection Program	Includes restrictions on activities that contribute to contamination of stormwater

## **Federal Programs**

### **Management Framework**

### **Regulatory Framework**

### **Non-Regulatory Framework**

programs. New Hampshire has a potential pool of \$10 million or more annually, but this money has thus far been restricted to supporting municipal wastewater treatment facilities and closure and capping of old landfills. In the seacoast area, where other problems may be more important to surface water quality, there should be increased flexibility to use these funds for other activities. In particular, future funds should be available for nonpoint source pollution programs, particularly when priority landfill closures have been completed.

## **State Programs**

### **Management Framework**



## **Regulatory Framework**

*Stormwater Management and Erosion Control  
Handbook for Urban and Developing Areas in New Hampshire*

*Green Book*

## **Non-Regulatory Framework**

<i>Nonpoint Pollution Through Municipal Programs</i>	<i>A Quick Guide to Controlling</i>
<i>Model Stormwater Management and Erosion Control Regulation</i>	
<i>Tidelines</i>	
<i>Urban Stormwater Runoff</i>	<i>Best Management Practices for</i>
<i>State Alteration of Terrain Permit Requirements for Sand and Gravel Pits</i>	
<i>Impacts of Development on Stormwater Runoff</i>	<i>Guidelines for the</i>
<i>Preparation of Site Specific Applications</i>	<i>Erosion Control on Timber Harvesting</i>
<i>Operations in New Hampshire</i>	

## **Local and Regional Programs**

### **Management Framework**

### **Regulatory Framework**

### **Non-Regulatory Framework**

## **Regulatory Framework**

**Table 4-2 Local Stormwater Control Provisions**

<b>Town</b>	<b>Plans Required</b>	<b>Provisions Similar to State Model</b>	<b>Impervious Surface Limits</b>	<b>References Green Book</b>	<b>Other Requirements</b>
Dover					May require 50 ft buffer for surface waters and impact report.
Durham			20-50%		Landscaping requirements.
Exeter	may require		10-75%		Local design specifications listed.
Greenland	✓				Uses some Green Book definitions. Snow storage plan required.
Hampton					Design for 50 year storm.
Hampton Falls	✓			✓	Design systems for 10 yr/24 hour storm.
Madbury					Post-development runoff not to exceed pre-development.
New Castle	may require			✓	Maintenance of control measures required through deed.
Newfields	✓		25%	✓	
Newington					Roads must comply with NHDOT standards.
Newmarket					Require oil/grease separators when near specified surface waters.
North Hampton	may require			✓	Green Book required when determined necessary. Snow storage plans required.
Portsmouth					Impervious surfaces minimized as practical for the use. May require 50 ft buffers for surface waters and wetlands.
Rochester	may require		16-75%		Requires impact study. No specific standards listed for control measures.
Rollinsford					
Rye	✓			✓	Lists standards in regulations. Hydrologic analysis required.
Seabrook					Design for 25 year storm, include oil and water separators where PB determines necessary.
Somersworth					Best Available Technology to minimize off-site runoff.
Stratham	✓	✓		✓	May require study.

## **Non-Governmental Programs**

## **Evaluation**

**1. *Good program management and coordination***

**2. *Gaps exist in the regulatory framework***

3. ***Limited staff and funding for non-point source programs, particularly the Site Specific program***
4. ***Recommended BMPs are designed primarily for flood control, not contaminant control***
5. ***Local stormwater management and implementation is limited and inconsistent***



6. ***Zone B communities are not as well served by outreach and technical assistance programs as Zone A communities:***

**Recommendations for Stormwater Runoff**

1. **Improve education and outreach efforts to local land use officials regarding RMPA, CSPA and stormwater protection ordinances.**
2. **Improve staff and funding levels of the Site Specific program and increase the outreach resources of the Shoreland Protection Program.**
3. **Restructure BMPs to address timing and contaminants of stormwater runoff to eliminate the goal of speeding stormwater to receiving waters and shift more focus to preventing and/or remediating contamination.**
4. **Improve outreach to local land use officials regarding the importance of stormwater control and the requirements of the CSPA with the goal of increasing the use of local land use regulations and improving enforcement.**
5. **Increase outreach efforts in NHEP Zone B communities focused on local nonpoint source pollution control options.**

**Septic Systems**

## **Institutional Infrastructure**

**Table 4-3 Septic System Program Summary**

<b>Program</b>	<b>Agency</b>	<b>Description</b>
<b>FEDERAL PROGRAMS</b>		
National Plumbing Standards	EPA	Requirements for water conserving plumbing fixtures in new construction. Reduced water use reduces demand on systems.
Clean Water Act research and demonstration programs	EPA	Septic system design and demonstration projects.
Federal Mortgage Assistance		Requirement for certification of proper system function as a condition of mortgage loans.
Clean Water Act Nonpoint source program	EPA	Funding that can be used for state nonpoint source programs.
Coastal Zone Management Act	NOAA Office of Ocean and Coastal Resource Mgmt	Funding that can be used for state nonpoint source programs.
Clean Water Act Water Quality Standards	EPA	Funding for state revolving loan funds that can be used for septic system upgrades when they are identified as a problem in state nonpoint source pollution programs.
<b>STATE PROGRAMS</b>		
Subsurface Program	NH Dept of Environmental Services Water Division	Review of design and installation of septic systems, certification of designers and installers, and investigation of water quality problems. Also includes operation and maintenance requirements and use of water conserving fixtures.
Comprehensive Shoreland Protection Act	DES Shoreland Protection Program	Strengthens setback requirements near surface waters covered under the act.
Groundwater Protection Act (RSA 485-C)	DES Subsurface Bureau	Standards for discharge of specific contaminants from commercial septic systems. DES also has authority to inspect systems for potential contamination and to develop BMPs.
Pollution Prevention Outreach	DES Subsurface Program	Outreach materials provided to new system owners real estate agents and developers.
Nonpoint Source Program	DES Water Division	Funds from nonpoint source program for outreach and other efforts.
NH Coastal Program	Office of State Planning	Funds from nonpoint source program for outreach and other efforts.
<b>LOCAL AND REGIONAL PROGRAMS</b>		
Land Use Regulations (RSA 674)	Municipal governments	May contain additional septic system requirements such as local inspection of installation, increased surface water setbacks etc.
Resource protection overlay districts	Municipal governments	May contain increased setback requirements.
Planning Assistance	Regional Planning Commissions	Assistance for master plan and ordinance development and for project review.

## **Federal Programs**

**Management Framework**

**Regulatory Framework**

**Non-Regulatory Framework**

## **State Programs**

**Management Framework**

## **Regulatory Framework**

### **Non-Regulatory Framework**

*Septic Systems, How They Work and How to Keep Them Working*  
*Care and Maintenance of Your Septic System* *You and*  
*Your Septic System: A Homeowner's Guide to Septic System Maintenance*

## **Local and Regional Programs**

### **Management Framework**

### **Regulatory Framework**

### **Non-Regulatory Framework**

### **Non-Governmental Programs**

## Evaluation

- 1. State has a strong regulatory framework**
- 2. Monitoring and enforcement of maintenance requirements is weak**
- 3. No mechanism exists for monitoring and enforcement of failed systems**



## Case Study:

### **Funding for Septic Repair and Upgrade**

**5. *The prohibition on products containing phosphorus may be inadequate***

**6. *Requirements for upgrading septic systems for expanded use or conversion from seasonal to permanent residences are not working***

**7. *Limited staff and funding***

**Recommendations for Septic Systems**

1. *The state should develop new mechanisms for monitoring and enforcing septic system maintenance, particularly for shoreland properties. [WQ-13]*
2. *The state should develop incentives for septic system repair and upgrade, especially financial incentives. Clean Water SRF money is available and should be considered as a source for low-cost loans for these activities. Alternative funding sources such as a user fee (most likely associated with an appropriate products such as toilets, toilet paper, etc.) should also be considered. [WQ-14]*
3. *Outreach materials should be developed and distributed by both the state and local communities regarding new assistance programs for repair or upgrade. In addition, recent outreach efforts targeting landowners along Great Bay should be extended to other water bodies in the NHEP study area. [WQ-13]*
4. *State inspectors should contact local code enforcement officials upon scheduling of septic system inspections to improve coordination with local requirements.*

## **Construction Runoff and Erosion**

## **Institutional Infrastructure**

**Table 4-4 Erosion Control Program Summary**

<b>Program</b>	<b>Agency</b>	<b>Description</b>
<b>FEDERAL PROGRAMS</b>		
Clean Water Act §402 NPDES permit program	EPA	Permits required for construction sites disturbing five acres or more. Permits contain requirements for erosion control measures.
Clean Water Act §404 Wetland permits.	US Army Corps of Engineers, EPA	Requires corrective action for erosion problems that impact wetlands.
Rivers and Harbors Act	US Army Corps of Engineers	Regulates dredging and disposal of dredge spoil.
Coastal Zone Management Act	NOAA Office of Ocean and Coastal Resource Mgmt	Funding that can be used for state nonpoint source programs.
Clean Water Act Nonpoint Source Program	EPA	Funding for state nonpoint source pollution programs.
<b>STATE PROGRAMS</b>		
Alteration of Terrain (RSA 485-A)	DES Site Specific Program	Requirement for use of BMPs for runoff and erosion control on site disturbances of 100,000 square feet. Program includes some outreach.
Comprehensive Shoreland Protection Act	DES Shoreland Protection Program	Reduces requirement for BMPs to site disturbances of 50,000 square feet near specified surface waters.
Wetland Protection	DES Wetlands Bureau	Protection for wetlands through permit requirements. Mitigation may be required.
Gravel Excavation Regulations	DES Water Division	Requirement for permitting of gravel excavation through local planning boards. Contains some erosion control provisions including surface water setbacks.
Road and Bridge project review	NH Dept. of Transportation	Internal review process through which erosion control measures are specified. Additional oversight provided through informal impact review process that incorporates NHFG, DES Wetlands Bureau, USACOE, USFWS and EPA.
Intent to Cut tax forms	NH Dept. of Revenue Administration, DRED Forest and Land Division	Forestry operations required to file "intent to cut" forms which require familiarity with and use of forestry BMPs.
<b>LOCAL AND REGIONAL PROGRAMS</b>		
Land Use Regulations (RSA 674)	Municipal governments	Municipalities may require erosion and stormwater control measures through land use regulations, particularly for subdivisions and site planning for land use change.
Planning Assistance	Regional Planning Commissions	Assistance for ordinance development and for project review.
<b>NON-GOVERNMENTAL PROGRAMS</b>		
Transportation Outreach	UNH Technology Transfer Center, NH Assn. of Conservation Districts	"Quick Guides" act as BMPs for road maintenance. Supplied to road agents.

## **Federal Programs**

### **Management Framework**

**Regulatory Framework**

**Non-Regulatory Framework**

**State Programs**

**Management Framework**

**Regulatory Framework**

*Stormwater  
Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire*

*Highways      Standard Specifications for Road and Bridge Construction      Manual on Drainage Design for  
Stormwater Management*

**Non-Regulatory Framework**

*and Erosion Control Regulation*

*Model Stormwater Management*

*Best Management Practices for Erosion Control on Timber Harvesting Operations in  
New Hampshire*

## **Local and Regional Programs**

### **Management Framework**

*Model*

*Stormwater Management and Erosion Control Regulation*

### **Regulatory Framework**



**Table 4-5 Local Erosion and Sediment Control Programs**

<b>Town</b>	<b>Plan Required</b>	<b>Provisions Similar to State Model</b>	<b>Soil Exposure Limits</b>	<b>References Green Book</b>	<b>Other Requirements</b>
Dover					May require 50 ft erosion control buffers.
Durham					Landscaping requirements.
Exeter		✓	✓	✓	Maintenance required through deed. Site roads to avoid grading and filling. Landscaping required for dust control.
Greenland	✓				Uses some specs from Green Book.
Hampton	✓				Disturbed areas shall be kept to a minimum.
Hampton Falls	✓	✓		✓	Maintenance required through deed.
Madbury	✓				General requirements for minimizing disturbance, using appropriate buffers, etc. Plan and impact study required for some subdivisions.
New Castle	✓	✓		✓	Maintenance required through deed.
Newfields	✓	✓	✓	✓	Performance standards apply, retain sediments on site.
Newington					
Newmarket					"Reasonable controls" required for disturbances smaller than state site specific program.
North Hampton	✓	✓		✓	Maintenance required through deed
Portsmouth	may be required				May require 50 ft erosion buffer around wetlands and surface waters.
Rochester	✓			✓	Large subdivisions must submit plan.
Rollinsford				✓	References SCCD standards (Green Book).
Rye	✓	✓		✓	Plan required for all "major" developments.
Seabrook					Requires measures to prevent erosion and sedimentation.
Somersworth				✓	Disturbed areas must be reclaimed, landscape plan required.
Stratham	✓	✓		✓	

## **Non-Regulatory Framework**

### **Non-Governmental Programs**

*Road Business*

## **Evaluation**

- 1. Limited staff and funding for Site Specific Program**
- 2. Best Management Practices are often out of date or inadequate**
- 3. Good program coordination among state, regional and local agencies and non-governmental organizations**
- 4. Limited state and local regulation of construction activities below the state disturbance thresholds**
- 5. Limited oversight of NH DOT projects**

### **Recommendations for Erosion and Sediment Control**

- 1. Improve staff and funding levels of the Site Specific program and increase the outreach resources of the Shoreland Protection Program.**
  - 2. Restructure BMPs to address timing and contaminants of stormwater runoff to eliminate the goal of speeding stormwater to receiving waters and shift more focus to preventing and/or remediating contamination.**
  - 3. The state should work with local governments to develop stronger provisions for erosion and sediment control for all construction and road building activities.**
- 
- 4. Increase DES Site Specific Program oversight of projects.**

### **Agriculture**

## **Institutional Infrastructure**

**Table 4-6 Agricultural Program Summary**

<b>Program</b>	<b>Agency</b>	<b>Description</b>
<b>FEDERAL PROGRAMS</b>		
Clean Water Act §402 NPDES permit program	EPA	Permits required for construction sites disturbing five acres or more. Permits contain requirements for erosion control measures.
Environmental Quality Incentive Program, conservation technical assistance, Conservation Reserve Program, crop supports, etc.	USDA Natural Resources Conservation Service	Programs providing support for erosion and sediment control on farmland and financial incentives for land conservation practices.
Federal Insecticide, Fungicide, and Rodenticide Act	USDA	Regulates use of pesticides and includes authority to ban highly toxic types.
Highly Erodible Land Conservation Compliance program	USDA	Allows USDA staff to report/enforce erosion deficiencies identified while performing unrelated duties.
<b>STATE PROGRAMS</b>		
Pesticide Control Program (RSA 430)	NH Dept. of Agriculture	Establishes BMPs for pesticide use, certification of users, education and technical assistance programs and a framework for restricting specific pesticides.
Manure Compost and Fertilizer Program (RSA 431)	NH Dept. of Agriculture	Establishes BMPs for nutrient management and sludge spreading.
Alteration of Terrain (RSA 485-A)	DES Site Specific Program	Permitting requirements may apply if erosion problems are identified.
Comprehensive Shoreland Protection Act (RSA 483-B)	DES Water Division	Setbacks and vegetation cutting limits may apply to agriculture if operations are found to adversely impact water quality.
Soil Conservation and Farmland Preservation (RSA 432)	NH Dept. of Agriculture	Authority for negotiating strategies with farmers for addressing water quality concerns. Also established conservation districts and distributes funding for erosion control and research.
Nonpoint Source Program	NH DES Water Division	Clean Water Act funds are sometimes used for mitigation of agriculture problems.
<b>LOCAL AND REGIONAL PROGRAMS</b>		
Land Use Regulations (RSA 674)	Municipal governments	May contain setback and vegetated buffer requirements, particularly through resource protection overlay districts. May also include bans on land application of sludge.
Manure composting program	Rockingham County Conservation District	Composting demonstration program and outreach to animal operations.
Local Health Inspections	Municipal governments	Local health inspector is authorized to monitor and enforce agricultural BMPs, pesticide application, etc.
<b>NON-GOVERNMENTAL PROGRAMS</b>		
Soil nutrient testing	UNH Cooperative Extension	Testing us used in development of site specific sludge and nutrient application rates.

## **Federal Programs**

### **Management Framework**

### **Regulatory Framework**

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### **Non-Regulatory Framework**

## **State Programs**

### **Management Framework**

### **Regulatory Framework**

*Management Practices for Agriculture in New Hampshire*  
*Wetlands Practices for Agriculture*

*Manual of Best*  
*Best Management*

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## **Local and Regional Programs**

### **Management Framework**

### **Regulatory Framework**

### **Non-Regulatory Framework**

## **Non-Governmental Programs**

### **Evaluation**

- 1. Management and regulatory programs are probably well suited to the scale of agriculture**
- 2. Funding and assistance programs are adequate**
- 3. Program coordination and cooperation are strong**
- 4. Surface water setbacks for cultivation, pesticide application and nutrient management are weak**
- 5. Voluntary BMPs create a weakness in water quality protection**

### **Recommendations for Agriculture**

- 1. Improve surface water setbacks for all agriculture activities, such as pesticide application, tilling and land spreading of manure and sludge.**
- 2. Agricultural BMPs should be mandatory and coupled with local enforcement by health inspectors.**

# **Forestry**

## **Institutional Infrastructure**

### **Federal Programs**

#### **Management Framework**

#### **Regulatory Framework**

## **Institutional Framework**

**Table 4-7 Forestry Program Summary**

<b>Program</b>	<b>Agency</b>	<b>Description</b>
<b>FEDERAL PROGRAMS</b>		
Clean Water Act §404 Wetlands permitting	US Army Corps of Engineers, EPA	Permits required for dredge and fill (including forest cutting) activities in wetlands.
Federal Insecticide, Fungicide, and Rodenticide Act	USDA	Regulates use of pesticides of all types and includes authority to ban highly toxic types.
<b>STATE PROGRAMS</b>		
Forestry Law (RSA 227-I, 227-J)	DRED Forest and Lands Division	Cutting and slash piling limits in proximity to surface water bodies. BMPs and other forest management provisions.
Intent to Cut tax provisions (RSA 79)	NH Dept. of Revenue Administration	Requires all forestry operations to file "Intent to Cut" forms with local community. Form requires compliance with forestry BMPs.
Pesticide Control Program (RSA 430)	NH Dept. of Agriculture, DRED Forest and Lands Division	Establishes BMPs for pesticide use, certification of users, education and technical assistance programs and a framework for restricting specific pesticides.
Manure Compost and Fertilizer Program (RSA 431)	NH Dept. of Agriculture	Establishes BMPs for nutrient management and sludge spreading.
Comprehensive Shoreland Protection Act (RSA 483-B)	DES Water Division	Vegetation cutting limits in proximity to surface waters (within 125 feet, 50% cutting limit in any 20 year period).
Dredge and Fill in Wetlands	NH DES Wetlands Bureau	Permits required for dredge and fill in wetlands including forestry operations.
<b>LOCAL AND REGIONAL PROGRAMS</b>		
Land Use Regulations (RSA 674)	Municipal governments	May contain vegetated buffer requirements, particularly through resource protection overlay districts. Municipalities also responsible for enforcement of some state regulations.
<b>NON-GOVERNMENTAL PROGRAMS</b>		
Education and outreach	SPNHF, NH Timberland Owners Association, Timber Harvesting Council, UNH Thompson School of Applied Science	A variety of forestry and BMP education and outreach programs.

## **Non-Regulatory Framework**

## **State Programs**

### **Management Framework**

### **Regulatory Framework**

*Best Management Practices for Erosion Control on Timber Harvesting  
Operations in New Hampshire*

**Non-Regulatory Framework**

**Local and Regional Programs**  
**Management Framework**

## **Regulatory Framework**

## **Non-Regulatory Framework**

## **Non-Governmental Programs**

## **Evaluation**

- 1. Forestry BMPs have not been recently updated and may be weak, particularly with respect to re-vegetation**
  
  
  
  
  
  
  
  
  
  
- 2. Implementation, monitoring and enforcement of BMPs is weak**

## **Recommendations for Forestry**

- 1. Forestry BMPs should be evaluated for effectiveness, particularly regarding re-vegetation requirements.**
- 2. BMP manuals should be distributed with each Intent to Cut tax form in order to improve distribution and implementation of BMPs.**
- 3. The state should evaluate forestry operations to determine the level of compliance with BMPs.**

## **Boating and Marinas**



## **Institutional Infrastructure**

**Table 4-8 Boating and Marinas Summary**

<b>Program</b>	<b>Agency</b>	<b>Description</b>
<b>FEDERAL PROGRAMS</b>		
Clean Water Act (§312)	EPA, US Coast Guard	Prohibits discharge of marine sanitation devices within three miles of shore and allows states to prohibit sewage discharge if it is necessary to meet water quality standards.
Ocean Dumping Ban Act	NOAA OCRM, US Coast Guard	Regulations restricting ocean dumping of sewage and solid waste.
Marine Plastics Pollution Research and Control Act	US Coast Guard	Prohibition on all ocean dumping of plastic debris within 200 miles of the US coast.
Clean Vessel Act	US Fish and Wildlife Service	Provided funds for construction, operation and maintenance of vessel pump-out facilities.
Comprehensive Environmental Response Compensation and Liability Act (CERCLA)	EPA	Creates a response mechanism for hazardous substance spills and clean-up and establishes liability for clean-up costs.
Clean Water Act Revolving Loan Fund	EPA	Funds for state activities to protect and enhance water quality. May include boating and marina related efforts.
<b>STATE PROGRAMS</b>		
Dredge and Fill in Wetlands (RSA 482-A)	DES Wetlands Bureau	Permits for dredge and fill of wetlands may include conditions to limit impacts of marina construction and/or renovation projects.
CWA and CZMA nonpoint source management programs	NH Dept of Environmental Services, NH Coastal Program	State's nonpoint source programs which have produced BMPs and outreach on vessel and marina operation and maintenance.
Alteration of Terrain, CSPA	DES Site Specific Program	Permit program for construction and other site disturbances of 50,000 square feet or more in shoreland areas. BMPs must be followed.
Control of Marine Pollution and Aquatic Growth (RSA 487)	Dept. of Environmental Services	Prohibits sewage discharge in NH waters and requires that on-board sanitation devices be configured to prohibit discharge.
Boating and Water Safety on New Hampshire Public Waters (RSA 270-D)	NH Dept of Safety	Limits vessels to headway speed within 150 feet of any shoreline.
Oil Spillage in Public Waters (RSA 146-A)	NH DES	Prohibits all discharge of fuel and oil into surface and groundwater, including pumping of oil contaminated bilge water.
<b>LOCAL AND REGIONAL PROGRAMS</b>		
Land Use Regulations (RSA 674)	Municipal governments	May contain stormwater and erosion control, building setbacks, and siting considerations.
Planning Assistance	Regional Planning Commissions	Assistance for master plan and ordinance development and for project review.
Planning Assistance	County Conservation Districts	Assistance with subdivision and site plan review.

## **Federal Programs**

### **Management Framework**

### **Regulatory Framework**

### **Non-Regulatory Framework**

## **State Programs**

### **Management Framework**

## **Regulatory Framework**

**Non-Regulatory Framework**

**Local and Regional Programs**

**Management Framework**

**Regulatory Framework**

**Non-Regulatory Framework**

**Non-Governmental Programs**

### **Evaluation**

- 1. The extent of pollution from boating and marinas is not well known and needs more evaluation.**
- 2. The Clean Water Act prevents the state from regulating in the estuaries, yet federal enforcement is inadequate.**
- 3. Local regulation of marinas is limited.**

### **Recommendations for Boating and Marinas**

- 1. The state should further study the water quality problems associated with boating and marinas and develop policies to address the findings as appropriate.**
- 2. Outreach to local governments regarding options for regulating marinas at the local level should be incorporated into existing local land use outreach efforts.**

## **Navigation Dredging**

## **Institutional Infrastructure**

**Table 4-9 Navigation Dredging Summary**

<b>Program</b>	<b>Agency</b>	<b>Description</b>
<b>FEDERAL PROGRAMS</b>		
Clean Water Act (§404)	US Army Corps of Engineers, EPA	Regulation of dredge and fill in wetlands through permits.
Rivers and Harbors Act (§10)	US Army Corps of Engineers	Regulates dredge and fill activities within navigable waters up to high tide.
Fish and Wildlife Coordination Act	US Fish and Wildlife Service	Provides USFWS with authority to comment on federal actions that affect fish and wildlife or their habitat.
National Environmental Policy Act	EPA	Established an environmental impact review process for federal or federally permitted actions. Includes mechanisms for comments by non-federal agencies and the public.
Magnuson Fisheries Conservation and Management Act	National Marine Fisheries Service	Provides NMFS with comment authority for all federal actions and permits that impact marine fisheries.
Marine Mammal Protection Act	NOAA	May restrict dredge operations to protect marine mammals.
Coastal Zone Management Act	NOAA OCRM	Provides a mechanism for states to influence federal projects to keep them consistent with coastal and estuarine goals.
<b>STATE PROGRAMS</b>		
Dredge and Fill in Wetlands (RSA 482-A)	DES Wetlands Bureau	Non-federal dredge projects within state waters must obtain wetlands permits. Permit conditions may limit project impacts.
Water Quality Protection Program	NH Dept of Environmental Services	Federal projects must obtain state water quality certification before work begins.
Coastal Nonpoint Source Program	NH Coastal Program	Federal projects such a dredging must obtain a determination from the state addressing the consistency of the project with the state coastal program. Inconsistencies must be resolved.

## **Federal Programs**

### **Management**

## **Regulatory Framework**

## **Non-Regulatory Framework**

### **State Programs**

#### **Management Framework**



## **Regulatory Framework**

## **Non-Regulatory Framework**

### **Local and Regional Programs**

## **Non-Governmental Programs**

## **Evaluation**

### **Solid Waste Management**



## **Institutional Infrastructure**

**Table 4-10 Solid Waste Management Summary**

<b>Program</b>	<b>Agency</b>	<b>Description</b>
<b>FEDERAL PROGRAMS</b>		
Resource Conservation and Recovery Act (RCRA)	EPA	Hazardous and solid waste requirements that include handling and disposal standards.
Comprehensive Environmental Response Compensation and Liability Act (CERCLA)	EPA	Creates a response mechanism for hazardous substance spills and clean-up and establishes liability for clean-up costs.
Clean Water Act	EPA	Clean Water Act funds, primarily in support of the State Revolving Loan Fund, help with landfill closures.
<b>STATE PROGRAMS</b>		
Solid Waste Management Program (RSA 149-M)	DES Waste Division	Regulation of construction and operation of landfills. Requires permits for proposed landfills and specifies certain design standards (e.g. liners and leachate collection systems). Also requires towns to develop solid waste management plans and provide for household hazardous waste disposal.
Groundwater Protection Act (RSA 485-C)	NH Dept of Environmental Services	Requires "groundwater release detection permit" and protection from contamination. Prohibits junkyards in Class GAA wellhead protection areas.
Comprehensive Shoreland Protection Act	DES Shoreland Protection Program	Prohibits siting of junkyards and landfill within 250 feet of rivers covered by the law.
Source Reduction	Office of State Planning	Source reduction efforts focus on recycling through the Governor's Recycling Program, a recycling market development program and community planning assistance. The state has a 40% recycling goal by 2000.
<b>LOCAL AND REGIONAL PROGRAMS</b>		
Land Use Regulations	Municipal Governments	Towns have broad authority to regulate junkyards, and several towns in the coastal area have prohibited them.
Recycling/Source Reduction Programs	Local Governments	Towns may require recycling and/or may provide curbside collection or drop-off centers. They can also charge volume-based garbage fees as an incentive to reduce volume.

## **Federal Programs**

### **Management Framework**

**Regulatory Framework**

**Non-Regulatory Framework**

**State Programs**

**Management Framework**

**Regulatory Framework**

**Non-Regulatory Framework**

**Local and Regional Programs**  
**Management Framework**

## **Institutional Infrastructure**

**Table 4-11 Local Landfill and Junkyard Prohibitions**

Town	Within Shoreland Protection Zones	Within Aquifer Protection Zones	Townwide
Dover		✓	
Durham		✓	✓
Exeter	✓	✓	
Greenland		✓	
Hampton		✓	
Hampton Falls			
Madbury	✓		
New Castle			
Newfields		✓	
Newington			✓
Newmarket			
North Hampton		✓	
Portsmouth			
Rochester			
Rollinsford		✓	
Rye			
Seabrook			✓
Somersworth		✓	
Stratham	✓	✓	

## **Regulatory Framework**

## **Non-Regulatory Framework**

## Non-Governmental Programs

### Institutional Infrastructure

Table 4-12 Local Source Reduction Efforts

Town	Mandatory Recycling	Offer Curbside Recycling	Volume-Based User Fees
Barrington	✓		
Brentwood			
Brookfield	✓		
Candia	✓		
Chester	✓		
Dover		✓	✓
Durham	✓	✓	
Exeter		✓	✓
Farmington			✓
Fremont		✓	
Hampstead		✓	
Hampton		✓	
Hampton Falls	✓	✓	
Kensington		✓	✓
Kingston		✓	
Lee	✓		
Madbury		✓	
Milton	✓		
New Durham	✓		
Newfields		✓	
Newmarket		✓	✓
Portsmouth		✓	
Rochester		✓	
Rye	✓		
Seabrook	✓	✓	
Somersworth		✓	✓
Strafford	✓	✓	
Stratham		✓	
Wakefield	✓		
Data from Office of State Planning, 1997			

### Evaluation

- 1. A large need remains for closure of old landfills, though substantial funds are being earmarked for completing closures***

**2. *Inadequate state regulation and oversight of junkyards***

**3. *Limited source reduction and recycling efforts***

**Recommendations for Solid Waste**

1. *Continue current efforts to close old landfills.*
2. *The state should move forward on developing BMPs and regulations for junkyards, including siting around aquifers and surface waters. At the same time, municipalities should consider similar regulations regarding junkyard siting. [LND-12,17]*
3. *The state should develop a source reduction program including efforts focused on producers as well as consumers. Such a program should include support to municipalities for composting and improved recycling efforts.*

**Landscaping**

**Institutional Infrastructure**



## Federal Programs

### Management Framework

### Regulatory Framework

### Non-Regulatory Framework

### Institutional Infrastructure

**Table 4-13 Landscaping Program Summary**

Program	Agency	Description
<b>FEDERAL PROGRAMS</b>		
Federal Insecticide, Fungicide and Rodenticide Act	EPA	Regulates use of pesticides and includes authority to ban highly toxic types. Also requires registration of users.
Clean Water Act	EPA	Nonpoint Source Program funds may be used to support efforts focused on landscaping.
<b>STATE PROGRAMS</b>		
Pesticide Control Program (RSA 430)	NH Dept. of Agriculture	Establishes BMPs for pesticide use, certification of users, education and technical assistance programs and a framework for restricting specific pesticides.
Manure Compost and Fertilizer Program (RSA 431)	NH Dept. of Agriculture	Establishes BMPs for nutrient management and sludge spreading.
Comprehensive Shoreland Protection Act	DES Shoreland Protection Program	Prohibits fertilizer use within 25 feet of protected shorelines and limits other fertilizers in the 250 foot protected shoreland area.
Alteration of Terrain (RSA 485-A)	DES Site Specific Program	Use of BMPs required for site disturbances of 100,000 square feet or 50,000 square feet in protected shoreland areas.
<b>LOCAL AND REGIONAL PROGRAMS</b>		
Land Use Regulations	Municipal governments	Towns may require landscaping for site disturbances, and golf course development would likely trigger site plan review requirements.

## **State Programs**

### **Management Framework**

### **Regulatory Framework**

### **Non-Regulatory Framework**

## **Local and Regional Programs**

### **Non-Governmental Programs**

## **Evaluation**

***Programs are generally adequate, though increased outreach might help reduce pollution caused by landscaping***

- 2. State needs improved BMPs and outreach to Golf Courses***

## **Recommendations for Landscaping**

- 1. The state should continue to focus outreach efforts regarding landscaping on landowners in shoreland areas.**
- 2. The state should move forward with developing and implementing for golf courses.**

## **Toxics and Underground Storage Tanks**

### **Institutional Infrastructure**

## **Federal Programs**

### **Management Framework**

### **Regulatory Framework**

## **Non-Regulatory Framework**

## **Institutional Infrastructure**

**Table 4-14 Summary of Toxics and Underground Storage Tanks**

<b>Program</b>	<b>Agency</b>	<b>Description</b>
<b>FEDERAL PROGRAMS</b>		
Resource Conservation and Recovery Act	EPA	Includes regulations for underground storage tanks and provides states with the option to receive delegated authority.
Comprehensive Environmental Response Compensation and Liability Act (CERCLA)	EPA	Creates a response mechanism for hazardous substance spills and clean-up and establishes liability for clean-up costs.
<b>STATE PROGRAMS</b>		
Hazardous Waste Management Program (RSA 147-A)	DES Waste Division	Requires a permit for all hazardous waste facilities, requires notification of local governments and establishes liability for clean-up costs. BMPs may be required.
Hazardous Waste Cleanup Fund (RSA 147-B)	DES Waste Division	A fund to receive fees and fines and be used for clean-up costs.
Highway Safety	NH Department of Safety	Regulations for transportation of hazardous materials and wastes, based largely on federal policies.
Underground Storage Facilities	DES	Non-residential tanks that are 10% underground must be registered with state. Requirements include leak detection, monitoring and containment procedures. Also addresses removal requirements. Owners must demonstrate financial responsibility for accidents.
Groundwater Protection Act	DES Subsurface Bureau	Contains standards for discharge and a classification scheme for groundwater sources.
Wellhead Protection Program	DES Subsurface Bureau	Program for identifying and protecting water supplies in wellhead protection areas. Includes BMPS for activities in wellhead protection areas and provisions for land conservation for protection of groundwater supplies.
<b>LOCAL AND REGIONAL PROGRAMS</b>		
Land Use Regulations	Municipal governments	Towns may adopt aquifer protection zones in which land uses are restricted to protect groundwater sources.

## **State Programs**

### **Management Framework**

### **Regulatory Framework**

### **Non-Regulatory Framework**

## **Local and Regional Programs**

### **Non-Regulatory Framework**

**Table 4-15 Municipal Underground Storage Tank and Hazardous Materials Programs**

Town	Shoreland Protection Zone	Aquifer Protection Zone	Townwide	Hazardous Waste Collection*
Dover		x, y		
Durham	x	x, y		
Exeter	x	x	x	Annual
Greenland		x	y	
Hampton		x, y		
Hampton Falls				
Madbury				
New Castle				
Newfields		x		
Newington				
Newmarket		y		
North Hampton		x, y		
Portsmouth				Annual
Rochester		x		
Rollinsford		x, y	y	
Rye				
Seabrook				
Somersworth		x		
Stratham	x	x		

## Non-Governmental Programs

### Evaluation

- 1. Regulatory programs are reasonably strong***
- 2. Communication regarding toxic clean-up and Superfund activities is weak***
- 3. The recent emphasis on land acquisition or protection in wellhead protection areas fills a gap in management of groundwater protection***

### **Recommendations for Toxics and USTs**

1. The state should move forward on developing BMPs and regulations for junkyards, including siting around aquifers and surface waters.
2. Federal personnel should work more closely with communities to respond to concerns and help them understand the lengthy procedures involved in toxic clean-ups and Superfund sites.

### **Summary Recommendations**

- ***Improve regulatory approach and/or state funding of non-point source programs***
- ***Continue to evaluate and revise Best Management Practices***
- ***Regularly update the Green Book***
- ***Improve local regulation of stormwater and erosion control***



- ***Explore ways to improve outreach efforts for local officials***
- ***Work to improve local regulation of development project impacts***
- ***Improve education of property owners***
- ***Increase land protection through acquisition or conservation easements***
- ***NHEP should work with the state to allow the use of Clean Water SRF money for activities identified as priorities through the CCMP***



# Point Source Pollution

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## Overview

**Table 5-1 Point Source Pollution Control Summary**

**Institutional Infrastructure**

Program	Agency	Description
<b>FEDERAL PROGRAMS</b>		
Clean Water Act NPDES Permit Program	EPA, USFWS, NMFS	Permitting of point source discharges of pollution. Includes discharge limits, technology requirements and water quality standards.
NEPA Environmental Assessments	EPA	Environmental review process of federal actions such as NPDES permits.
Coastal Zone Management Act	NOAA Office of Ocean and Coastal Resource Management	Consistency review procedures require federal actions such as NPDES permits to be consistent with approved state Coastal Zone Management Programs.
Fish and Wildlife Coordination Act	US Fish and Wildlife Service	Authority to comment on federal actions, such as NPDES permits, that affect fish and wildlife habitat.
Clean Water Act Revolving Loan Fund	EPA	Funds for state activities to protect and enhance water quality.
National Pre-treatment Program	EPA	Requirements for pre-treatment for industrial effluent sent to wastewater treatment facilities.
<b>STATE PROGRAMS</b>		
Water Pollution and Waste Disposal Act (RSA 485-A)	NH Dept of Environ Svcs	Water quality protection through establishment of water quality standards and a water body classification scheme.
Wastewater Engineering Technical Assistance	NH DES.	Training for operators of wastewater treatment facilities.
State Revolving Loan Fund		Federal funding with a state match for water quality protection. NH allocates these funds to landfill closure and wastewater treatment facility upgrade and construction.
<b>LOCAL AND REGIONAL PROGRAMS</b>		
Wastewater Treatment Facility operation	Municipal governments	Operating procedures and industrial pre-treatment agreements help determine the performance of local WWTFs.
Storm drain maintenance	Municipal governments	Maintenance activities help keep contaminants from being flushed into the estuaries.
Sewage Collection System operation	Municipal governments	Investigation of inflow and infiltration and separation of combined sewer overflows reduces contamination problems.
<b>NON-GOVERNMENTAL PROGRAMS</b>		
Outreach activities	New England Water Environment Association	Activities including annual conference focus on preservation of water quality and water resources through advancement of technology and design, information dissemination, etc.

## **Federal Programs**

### **Management Framework**

### **Regulatory Framework**

**Table 5-2 Permitted Wastewater Treatment Facilities**

<b>Town</b>	<b>Receiving Waters</b>
Dover	Piscataqua River
Durham	Oyster River
Epping	Lamprey River
Exeter	Squamscott River
Farmington	Cocheco River
Hampton	Tide Mill Creek (Hampton Harbor)
Newfields	Squamscott River
Newington	Piscataqua River
Newmarket	Lamprey River
Portsmouth	Piscataqua River
Rochester	Cocheco River
Rollinsford	Salmon Falls River
Somersworth	Salmon Falls River
Berwick, ME	Salmon Falls River
Kittery, ME	Piscataqua River
South Berwick, ME	Salmon Falls River

**Table 5-3 Industrial NPDES Permits**

<b>Town</b>	<b>Company</b>	<b>Receiving Waters</b>
Rochester	Tillotson Healthcare Corp.	Salmon Falls River
Seabrook	KJ Quinn & Co., Inc.	Cains Brook
	Millipore of New Hampshire, Inc.	Taylor River
	Morton International	Cains Brook
	Seabrook Station	Atlantic Ocean
Rye	Wallis Sands	Atlantic Ocean
Gonic	Kane Gonic Brick Corp.	Cocheco River
Hampton	Enviro Systems	Taylor River
Newington	Pease Development Corporation	Piscataqua River
	PSNH Newington Station	Piscataqua River
	PSNH Schiller Station	Piscataqua River

From: Jones, 1997

**Non-Regulatory Framework**

**State Programs**

**Management Framework**

**Regulatory Framework**

*E. coli*



### **Non-Regulatory Framework**

## **Local and Regional Programs**

### **Management Framework**

### **Regulatory Framework**

### **Non-Regulatory Framework**

**Table 5-4 Local Point Source Management**

<b>Municipality</b>	<b>WWTF</b>	<b>Storm Drain Maintenance</b>
Dover	Proposed 6 year, \$0.5 million /yr, I&I study and repair project. Plant upgraded to secondary, operated by OMI.	Done as time is available and when problems are reported. No maintenance plan.
Durham	Oyster River Watershed study found problems. System upgraded to secondary treatment	Inspect annually or as time is available.
Exeter	CSO elimination	Inspect annually or as time is available.
Hampton	I&I study done by consultant, no significant problems found.	Catch basins cleaned 1-2 times per year
Newfields	Recent study of system, no problems found. System installed 1983.	
Newington	No studies. I&I not seen as a problem. System installed 1980-81. 160-170k GPD on 290k GPD capacity system.	
Newmarket	CSO elimination; system recently upgraded to secondary treatment	
Portsmouth	CSO elimination	
Rochester	New advanced treatment system	
Rollinsford	System improvements	
Seabrook	New system for entire town, 1997	
Somersworth	System improvements	

## **Non-Governmental Programs**

### **Evaluation**

- 1. *Strong regulatory program, particularly the NH withholding of 10% of allowable discharge***
- 2. *Inadequate state and federal staffing for permitting and enforcement***
- 3. *Insufficient resources for identifying and repairing sewage collection system leaks***
- 4. *WWTF training programs need improvement***

**Recommendations**

- 1. *Develop a coordinated program and funds to identify and resolve CSOs, infiltration and inflow, leaky collection systems, and similar problems.***

- 2. Improve local regulations to prevent contamination of stormwater runoff.**
- 3. Continue investigations into stormwater management technology for improving runoff quality.**
- 4. Improve training of WWTF operators.**

# Habitat Alteration

## Overview

**Table 6-1 Land Use in the Great Bay and Hampton Harbor Watersheds**

	<b>Great Bay Estuary</b>		<b>Hampton Harbor Estuary</b>	
<b>Land Use Category</b>	<b>Acres</b>	<b>Percent of total</b>	<b>Acres</b>	<b>Percent of total</b>
Forested/Open	271,080	59	19,341	77
Residential	50,877	11	4,163	17
Commercial/Mixed	11,345	2	1,130	4
Industrial	3,118	1	282	1
Recreational	12,216	3	128	1
Agricultural/Mining	17,243	4	89	0
Not Classified	96,958	21	0	0

From: Draft Technical Characterization

## Shoreline Development and Riparian Buffers

**Table 6-2 Shoreland Development Potential**

Land Character	Percent of Total Land Area
Developed	35
(large wetlands or utility rights-of-way)	21
Permanent Conservation Land	16
	28



## *Institutional Infrastructure*

**Table 6-3 Shoreland Protection Program Summary**

Program	Agency	Description
<b>FEDERAL PROGRAMS</b>		
National Flood Insurance Program	Federal Emergency Management Agency	Federal flood insurance for structures in flood zones, with requirements for floodplain zoning and technical assistance programs.
Coastal Zone Management Act	NOAA Office of Ocean and Coastal Resource Management	Funding for nonpoint source protection and Consistency provisions which require federal actions to be consistent with approved state Coastal Zone Management Programs.
Wild and Scenic Rivers Act	National Park Service	Program for river and river corridor protection, including restrictions on flow impediments and funding for river corridor management.
Land Conservation	Great Bay National Estuarine Research Reserve, USFWS	Land acquisition and protection around Great Bay.
Clean Water Act	EPA	Funding for State Revolving Loan funds
<b>STATE PROGRAMS</b>		
Shoreland Protection Program	NH Dept of Environ Svcs	Land use restrictions in shoreland areas.
Dredge and Fill in Wetlands	NH Dept of Environ Svcs	Protection for the 100 foot Tidal Buffer Zone around estuary waters
Current Use Program	NH Department of Revenue Administration	Provides a reduced tax rate for land in which development will not occur.
NHCP Technical Assistance Grants	NH Coastal Program	CZMA funds for technical assistance for local land use regulations.
Wetlands Training Workshops	NH DES, NH Assn of Conservation Commissions	Training in delineation, investigation of violations, etc.
<b>LOCAL AND REGIONAL PROGRAMS</b>		
Planning Assistance	Regional Planning Commissions	Assistance for ordinance development and planning initiatives for local governments.
Local Land Use Regulations	Local Land Use Boards	Development and implementation of local land use regulations including shoreland protection districts.
<b>NON-GOVERNMENTAL PROGRAMS</b>		
Land Conservation	Great Bay Resource Protection Partnership	Partnership of public and private agencies focusing on land protection around Great Bay.

*Buffers for Wetlands and Surface Waters: A  
guidebook for New Hampshire Municipalities*

## **Federal Programs**

### **Management Framework**

### **Regulatory Framework**

### **Non-Regulatory Framework**

## **State Programs**

### **Management Framework**

## **Regulatory Framework**

### **The Comprehensive Shoreland Protection Act:**

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**Table 6-4 Fourth Order and Higher Streams**

<b>River</b>	<b>Reach</b>
Bean River	From Pawtuckaway Pond outlet to juncture with North River.
Bellamy River	From Bellamy Reservoir outlet to tidal limit in Dover.
Cocheco River	From Isinglass River to tidal limit in Dover.
Exeter River	From Great Brook juncture to tidal limit in Exeter.
Isinglass River	From juncture of Nippo Brook in Barrington to junction with Cocheco River.
Lamprey River	From juncture with North Branch River to tidal limit in Newmarket.
North River	From juncture of Bean River to Lamprey River juncture.
Salmon Falls River	From outlet of Milton Pond to tidal limit in Rollinsford.

**Table 6-5 Enforcement of Comprehensive Shoreland Protection Act**

<b>Enforcement Action</b>	<b>1995</b>	<b>1996</b>	<b>1997*</b>
Total Cases	75	102	95
Violations	8	20	20
Letters of Deficiency	8	13	
Administrative Orders	4	7	
Administrative Fines	0	4	
Referrals to Department of Justice	0	0	
Unresolved Cases	9	8	35

Data from DES Biology Bureau and Braile, 1997  
 \* Through August 11, 1997

## Case Study:

### ***Implementation of the New Hampshire CSPA***

A Durham resident on Great Bay recently discovered that new neighbors had clearcut shrub vegetation along about one-third of their shoreland frontage, an estimated length of substantially more than 100 feet. The clearing extended right to the water's edge, with machinery tracks extending to or into the water along the shoreline. Believing it to be a violation of the Durham shoreland protection ordinance, the resident contacted the new owners and reported the activity to the Durham planning board. The owners had hired a forester who had claimed the cutting was legal because it was intended to reclaim an old field that had been left to grow over.

Upon notification, Durham officials investigated and determined that the activity was legal. Closer examination by one planning board member, however, revealed that, although the clearing may have been allowed under state law, the Durham ordinance was more strict and would prohibit the activity. State law allows an exemption for removing "dangerous" and "noxious" vegetation (these terms are not defined in the legislation), and what was cut was evidently sumac and poison ivy. This vegetation would presumably be considered noxious or dangerous and would qualify for the exemption (again, since state law is unclear on the definition, such determination would be left for the courts to decide if the activity were challenged). The Durham ordinance, however, does not allow for such an exemption, and thus the activity was a violation.

Specifically, the Durham ordinance allows the cutting of understory and ground cover on up to 50% of the shorefront provided that where it is removed, a well-distributed stand remains (the ordinance specifically prohibits any cutting of trees over 6 inches DBH, though the shrubs in this case were below that size). In addition, clearing is permitted for providing an access point to the water (for a path), and up to 10% may be cleared for use of boat dock, ramp or other facility. The ordinance does not allow clearing for the purpose of maintaining viewsheds, though it does allow maintenance of pre-existing clearings, since no cutting would occur. In this case, clearing was evidently done to maintain a view of the water and to provide an opening for horses.

The Durham zoning administrator and the chair of the Conservation Commission both feel that there was no problem with the cut. They specifically note that the owners had hired a forester to do the cutting and that the forester had confirmed that the activity was legal. In addition, they point out that though cut, there was no tilling of the soil (prohibited by the ordinance within 75 feet of the shoreline) nor removal of the stumps and root systems, so erosion would be minimized. The resident who initiated the investigation, on the other hand, was given the impression by local officials and by the town manager that a violation had occurred and that a letter to that effect would be sent to the owners.

The town has not acted further on the case, and no letter of deficiency has been sent. The abutter was told by one Town Council member that, though there was a violation of the town's ordinances, there was no problem because the neighbors had money, and therefore good taste. The resident has expressed concern that, though the impact from this one project may have been slight for the entire estuary system of Great Bay, it represents both a loophole in state law and a case of inadequate enforcement for existing laws.

Several issues are highlighted by this case. First, the case points to a provision in the state law (the exemption for cutting of dead, diseased, noxious or unsafe vegetation) that could result in substantial clearings of shorelands in opposition to the intent to prevent erosion and storm-water runoff. This issue is confounded somewhat by the intent of the exemption, which is clearly to protect the welfare of property owners (though not necessarily their aesthetic sensibilities).

(Continued on next page)

Second, it highlights the level of interpretation built into decisions regarding enforcement of zoning ordinances, even when those ordinances appear at first glance to be carefully constructed. Some level of interpretation is necessary in order to deal with individual circumstances that cannot be foreseen when ordinances are developed. On the other hand, and thirdly, interpretation should not subvert the intent of the ordinance. The intent of the ordinance, and the state law, is to prevent pollution including erosion. A site visit almost a year after the cut showed machinery tracks, disturbed soil and erosion clearly visible throughout the cut area, all the way to the water's edge.

There is some uncertainty as to the severity or nature of the violation, though a strict interpretation of the Durham ordinance suggests there was in fact a violation. What should be done about it is perhaps even less clear; enforce in a case where at least some of the intent is followed, or risk setting a precedent that the ordinance will not be enforced.

The Rivers Management and Protection Act of 1988 (RSA 483) provides another regulatory framework for shoreland protection. Rivers designated under this act receive certain protections not offered to other rivers of the state. The act sets up a river corridor one quarter of a mile wide on each side of the river and provides specific protections such as a prohibition against new dams or other flow impediments, prohibitions on inter-basin transfers, restrictions on solid waste disposal facilities in the river corridor, and other provisions depending on the river's classification (e.g. "Natural," "Rural," "Rural-Community," or "Community"). Instream flow rules that would limit consumption during low water periods are in the process of being developed.

River Corridor Management Plans are required for designated rivers, and must stipulate permitted and prohibited uses, wetland, floodplain and habitat protections, setbacks, and other management considerations for the rivers and corridors. A local river advisory committee made up of residents and local officials develops the plan and is authorized to comment on actions requiring state and federal permits. There are currently two designated rivers within the NHEP area; the Lamprey River (from the Epping/Lee town line to the Newmarket/Durham town line) and the Exeter River (from the route 102 bridge in Chester to the confluence with Great Brook in Exeter).

### **Non-Regulatory Framework**



## **Local and Regional Programs**

### **Management Framework**

### **Regulatory Framework**



**Table 6-6 Local Shoreland Protection Regulations**

Town	District Exists	District Limits	District Extent	Building Setbacks	Septic Setbacks	Land Use Restrictions E&	Vegetated Buffers	Impervious Limits	Density Limits
Dover	3	50-250'	All waters	50-100'		3	3		3
Durham	3	75-150'	All waters	75-125'	150'	3	3		3
Exeter	3	150-300'	All waters	100-150'	100-150'	3	3	3	
Greenland									
Hampton									
Hampton Falls									
	3	50-300'	All waters	50-300'			3		
New Castle									
	3	100-150'	All waters	100-150'			3		
Newmarket	3	125'	Selected waters (also refs state act)	125'	125' (Class A waters)	3	3	3	3
North Hampton									
Portsmouth	3	100'	Selected waters	100'		3	May require		
Rochester				30'		3			
		250'	Part of Salmon Falls River	250'	(250')	3			
Rye		100'		100'	100'	3	3		
	3	250'	Selected waters (by ref to state act)	50'	75-125'	3	3	3	3
	3	100-150'	All waters	100-150'	100'	3	3		

**Table 6-7 - Comparison of Local and State Shoreland Protection Ordinances**

	Dover	Durham	Exeter	Madbury	Newfields	Newmarket	Stratham
District Limits			0				
Restrictions E&SCs		0	✓				
Septic Setbacks		✓	✓				
Structure Setback	✓	✓	✓	✓	✓	✓	✓
Vegetated Buffer						0	
Density Limits						✓	

3 = equal or stronger provisions  
0 = some provisions stronger, some weaker  
Some provisions taken from underlying zoning.

### **Non-Regulatory Programs**

### **Non-Governmental Programs**

*Buffers for Wetlands and Surface Waters: A Guidebook for New Hampshire*

## *Municipalities*

### **Evaluation**

1. *Strong overall management framework, though some weaknesses exist*

2. *CSPA is complicated to implement at the local level*
3. *Good program coordination*
4. *Very limited budgets and funding, particularly for the Shoreland Protection and Site Specific programs*
5. *Limited local participation*
6. *Limitations in the Current Use program make it less effective in areas*

**Recommendations For Shoreland Development and Riparian Buffers**

- 1. The DES Shoreland Protection Program, in cooperation with the NH Coastal Program, should focus efforts on improving implementation and enforcement of Comprehensive Shoreland Protection Act.**
- 2. The CSPA should be revised to cover smaller streams (such all perennial or 2nd and 3rd order streams), although the political feasibility of such a change is currently very low.**
- 3. The Shoreland Protection Program and OSP should develop outreach projects in cooperation with the Regional Planning Commissions to demystify the CSPA.**
- 4. The state should take advantage of real estate transfers for outreach efforts about shoreland protection.**

## **Wetland Loss and Alteration**



## *Institutional Infrastructure*

**Table 6-8 Wetland Protection Program Summary**

Program	Agency	Description
<b>FEDERAL PROGRAMS</b>		
Clean Water Act 404	USACOE, EPA, USFWS, NMFS	Permitting of dredge and fill in wetlands.
Fish and Wildlife Coordination Act, Magnuson fisheries Conservation and Management Act	USFWS, NMFS	Wetlands permit review and consultation authority.
NEPA Environmental Assessments	EPA	Environmental review process of federal actions such as wetland permits.
Coastal Zone Management Act	NOAA Office of Ocean and Coastal Resource Management	Consistency review procedures require federal actions such as wetland permits to be consistent with approved state Coastal Zone Management Programs.
Land and Water Conservation Fund	National Park Service, USFWS, Forest Service	Program for funding of land conservation including acquisition.
Migratory Bird Conservation Fund	USFWS	For purchase of land to protect migratory birds.
Swampbuster, Wetland Reserve Programs	USDA Natural Resources Conservation Service	Programs for prohibiting federal subsidies for crops grown on degraded wetlands, and paying farmers to restore wetlands on agricultural land.
<b>STATE PROGRAMS</b>		
Dredge and Fill in Wetlands	NH Dept of Environ Svcs	Permit program for dredge and fill of wetlands including the 100 foot Tidal Buffer Zone
Prime Wetlands	NH DES, Local Government	Additional protection for areas designated Prime Wetlands by municipalities.
Current Use Program	NH Department of Revenue Administration	Provides a reduced tax rate for land in which development will not occur.
NHCP Competitive Grants	NH Coastal Program	CZMA funds applied by the state for projects such as salt marsh restoration.
NHCP Technical Assistance Grants	NH Coastal Program	CZMA funds for technical assistance for local land use regulations.
Wetlands Training Workshops	NH DES, NH Assn of Conservation Commissions	Training in delineation, investigation of violations, etc.
<b>LOCAL AND REGIONAL PROGRAMS</b>		
Planning Assistance	Regional Planning Commissions	Assistance for ordinance development and planning initiatives for local governments.
Local Land Use Regulations	Local Land Use Boards	Development and implementation of local land use regulations including wetland protection districts.
Wetland Permit Review	Conservation Commissions	Review of state wetland permits with authority to delay permit issuance.
<b>NON-GOVERNMENTAL PROGRAMS</b>		
Wetland Delineations	NH Audubon Society	Assistance to municipalities for delineation of wetlands using the New Hampshire method.

## **Federal Programs**

### **Management Framework**

### **Regulatory Framework**

*for Identifying and Delineating Jurisdictional Wetlands*

**Non-Regulatory Framework**

*Buffers for Wetlands and Surface Waters: A Guidebook for New Hampshire  
Municipalities*

**State Programs**

**Management Framework**

*Evaluation of Restorable Salt Marshes in New Hampshire*

**Regulatory Framework**

*of Nontidal Wetlands in New Hampshire*

*Method for Comparative Evaluation*

**Non-Regulatory Framework**

*Buffers for Wetlands and Surface Waters: A Guidebook for New Hampshire  
Municipalities*

## **Local and Regional Programs**

### **Management Framework**

### **Regulatory Framework**

### **Non-Regulatory Framework**

### **Non-Governmental Programs**

*Buffers for Wetlands and Surface Waters: A Guidebook for New Hampshire  
Municipalities*

**Table 6-9 Local Wetland Protection Regulations**

Town	Ordinance	Prime Wetlands	Definition	Dredge & Fill, Prohibited	Septic Setbacks	Building Setbacks	Buffers
Dover	3		Soil Type	3	75'	75' from Type A	
Durham	3		Soil Type	3	75'	50-75'	
Exeter	3		HISS		50-75'		may require 50'
Greenland							
Hampton	3	3	Soil Type	3	75'	50'	
Hampton Falls	3		Soil Type	3			
	3		Soil Type	3	100'		50'
New Castle	3	3	Hydrology, soils, vegetation	3	50-75'	25-50'	
	3		HISS	3	50-75'	50-75'	
	3		HISS	3	75'	75' from very poorly drained soils	
Newmarket	3	3	Soils	3		100' from Prime wetlands	25' from Type A soils 50' from Prime Wetlands
North Hampton	3		Federal criteria	3	75'	50-75'	75' for hazardous materials
Portsmouth	3		Specified district, confirmed by hydro, soils, vegetation	3	75' from specified sites	75-100'	75'
Rochester	3		Federal criteria	3			
	3		Soils	3			
Rye	3		Soils	3	100'	100'	100'
	3		Hydrology, soils, vegetation		may require	may require	may require
	3		Soils	3	50-100'	50-100'	may require 50'

### **Evaluation**

- There is a reasonably strong regulatory framework including local land use regulations***



***2. Limited state funding for wetland protection***

***3. The state needs a formal wetlands mitigation policy***

***4. No program exists for evaluating impacts of permitting and mitigation policies***

**5. *No framework exists for protection of vernal pools***

**6. *The Prime Wetlands program is not living up to its potential in the seacoast***

**Recommendations for Wetland Loss and Alteration**

- 1. DES should develop and adopt a formal wetland mitigation policy and increase the use of mitigation through the state permit process.**
- 2. The state should develop a means of tracking impacts to wetlands from permitted and non-permitted activities.**
- 3. DES, in cooperation with local officials, Conservation Commissions and Regional Planning Commissions, should develop a program for protecting vernal pools.**

## **River and Estuary Protection**

**Institutional Inventory**

**Federal Programs**

**Management Framework**

**Table 6-10 River and Estuary Protection Program Summary**

<b>Program</b>	<b>Agency</b>	<b>Description</b>
<b>FEDERAL PROGRAMS</b>		
Clean Water Act #404	USACOE, EPA, USFWS, NMES	Permitting of dredge and fill in wetlands.
Rivers and Harbors Act #9, 10	USACOE, EPA	Regulates dredge and fill activities in navigable waters, including dam construction.
Hydroelectric Licensing	FERC	Program includes operating requirements and flow requirements.
NEPA Environmental Assessments	EPA	Environmental review process of federal actions such as hydro licenses and dredging.
Coastal Zone Management Act	NOAA Office of Ocean and Coastal Resource Management	Consistency provisions require federal actions to be consistent with approved state Coastal Zone Management Programs.
Wild and Scenic Rivers Act	National Park Service	Program for river and river corridor protection, including restrictions on flow impediments and funding for river corridor management.
<b>STATE PROGRAMS</b>		
Dredge and Fill in Wetlands	NH Dept of Environ Svcs	Permit program for dredge and fill of wetlands including the 100 foot Tidal Buffer Zone
Rivers Management and Protection Act	NH DES, Local Gov't.	Additional protection for areas designated Prime Wetlands by municipalities.
Site Specific Program	NH Department of Revenue Administration	Provides a reduced tax rate for land in which development will not occur.
Highway and Bridge Project Review Procedures	NH DOT	Non-regulatory review procedures for highway and bridge projects aid in project design and scope.
NH Coastal Program	OSP	Funding under CZMA used to restore salt marshes and correct tidal restrictions.
<b>LOCAL AND REGIONAL PROGRAMS</b>		
Wetland Permit Review	Conservation Commissions	Review of state wetland permits with authority to delay permit issuance.
<b>NON-GOVERNMENTAL PROGRAMS</b>		
Technical Assistance	NH Rivers Council	Provides assistance to community groups that want to nominate a river or river stretch into the Rivers Management and protection Program.
Salt Marsh Restoration	NH Audubon Society	Evaluation of restorable salt marshes and related projects.

**Regulatory Framework**

**Non-Regulatory Framework**

New Hampshire

*Evaluation of Restorable Salt Marshes in*

**State Programs**

**Management Framework**

## **Regulatory Framework**

### **Non-Regulatory Framework**

*Small Embankment-Type Dams and Their Ponds: An Operation and Maintenance Handbook*

*Evaluation of Restorable Salt Marshes in New Hampshire*

### **Local and Regional Programs**

### **Non-Governmental Programs**

*Evaluation of Restorable Salt Marshes in New Hampshire*



### **Evaluation**

1. ***New Hampshire's policies regarding water-based habitat are limited and fragmented.***

2. ***No policies exist for managing water use or protecting minimum flows***

3. ***Unclear policy on road crossings and culverts***

*of Restorable Salt Marshes in New Hampshire*

*Evaluation*

### **Recommendations for River and Estuary Protection**

1. The state should develop a more comprehensive approach to water habitat protection and improve coordination of its surface water programs.
2. There is a significant need for the state to improve the coordination of DOT projects with the agencies that protect natural resources.
3. The state should develop a formal water use policy that addresses all levels of consumption of both ground and surface waters.

## **Open Space and Habitat Acquisition**

### **Institutional Inventory**

## **Federal Programs**

### **Management Framework**

**Table 6-11 Open Space and Habitat Protection Program Summary**

<b>Program</b>	<b>Agency</b>	<b>Description</b>
<b>FEDERAL PROGRAMS</b>		
National Wildlife Refuge System	USFWS	Habitat protection for wildlife.
National Estuarine Research Reserve System	NOAA Office of Ocean and Coastal Resources Management	Protection of estuaries for research and education.
Wildlife Habitat Incentive Program	USDA Natural Resources Conservation Service	Environmental review process of federal actions such as hydro licenses and dredging.
Wetland Reserve Program	USDA Natural Resources Conservation Service	Consistency provisions require federal actions to be consistent with approved state Coastal Zone Management Programs.
Safe Drinking Water Act	EPA	Provides funds for State Revolving Loan Funds which can be used to purchase and protect land around drinking water sources.
<b>STATE PROGRAMS</b>		
State Parks	DRED Parks and Recreation Division	Administration and acquisition of state parks.
State Forests	DRED Forest and Land Division	Administration and acquisition of state forests.
Land Conservation Investment Program	DRED Forest and Land Division	Management (and former acquisition) of conservation lands.
Endangered Species Conservation Program	NH Fish and Game Department	Land acquisition for endangered species habitat protection.
Waterfowl Conservation Program	NH Fish and Game Department	Creates a fund from waterfowl stamps which can be used for waterfowl habitat conservation.
Non-game Species Management	NH Fish and Game Department	Allows land and aquatic habitat acquisition for non-game species protection.
Natural Heritage Inventory	DRED	Rare plant protection program which allows land acquisition for plant protection.
Current Use Program	NH Department of Revenue Administration	Provides a reduced tax rate for land in which development will not occur.
<b>NON-GOVERNMENTAL PROGRAMS</b>		
Land Conservation Investment Program	Society for the Protection of NH Forests	Staff provided for management of LCIP lands.
Great Bay Resource Protection Partnership	Nature Conservancy, NH Audubon, SPNHF	Evaluation of restorable salt marshes and related projects.

**Regulatory Framework**

**Non-Regulatory Framework**

## State Programs

### Management Framework

### Regulatory Framework

### Non-Regulatory Framework

**Table 6-12 State Parks and Forests in the NHEP Study Area**

<b>Park or Forest</b>	<b>Location</b>	<b>Acreage</b>
Pawtuckaway State Park	Nottingham	5,536.1
Northwood Meadows State Park	Northwood	664.5
Odiorne State Park	Rye	331.5
Blue Job State Forest	Farmington	283.6
Urban Forestry Center	Portsmouth	182.0
Woodman State Forest	Northwood	137.8
Wentworth-Coolidge Historic Site	Portsmouth	64.5
Rye Harbor State Park	Rye	63.0
Hamptom Beach State Park	Hampton	50.0
Smith State Forest	Nottingham	48.7
Wallis Sands State Beach	Rye	30.0
Nottingham State Forest	Nottingham	14.6
White Island Historic Site	Rye	5.0
Southeast State Forest	Nottingham	4.3
Stevens Pines State Forest	Nottingham	4.0
Portsmouth fish Pier	Portsmouth	3.0
Fort Constitution Historic Site	New Castle	2.0
Jenness State Beach	Rye	1.3
North Hampton State Beach	North Hampton	1.1

**Table 6-13 NH Fish and Game Lands in the NHEP Study Area**

<b>Site</b>	<b>Location</b>	<b>Size</b>
Adams's Point	Durham	80 acres
Bellamy River Access	Dover	17 acres
Burnham's Marsh	Nottingham	25 acres
Dole's Marsh	Deerfield	25 acres
Great Bay Access	Greenland	39 acres
Hampton Salt Marsh conservation Area	Hampton, Hampton Falls, Seabrook	272 acres
Lamontagne Wildlife Management Area	Deerfield	337 acres
Ten Rod Marsh	Farmington	15 acres
Woodman Marsh	Northwood	20 acres

**Table 6-14 Allocation of Current Use Tax Penalty  
to Conservation Funds**

<b>Town</b>	<b>Zone</b>	<b>Allocation</b>
Durham	A	50%
Hampton Falls	A	10%
Madbury	A	50%
Newfields	A	5%
Newmarket	A	50%
North Hampton	A	100%
Portsmouth	A	100%
Rye	A	50% (\$2,000 cap)
Rollinsford	A	100%
Chester	B	100% (\$20,000 cap)
Danville	B	100%
Kensington	B	25%
Lee	B	50%
Northwood	B	10%
Raymond	B	25%
Sandown	B	25%

## **Local and Regional Programs**

## **Non-Governmental Programs**



**Table 6-15 Conservation Land and Open Space Programs  
in NHEP Zone A Towns**

<b>Town</b>	<b>Conservation Land (acres)</b>	<b>Percent of total land</b>
Dover	1445.9	8.3
Durham	2903.4	21.1
Exeter	2015	15.9
Greenland	568.8	8.3
Hampton	630.4	7.3
Hampton Falls	480.5	6.1
Madbury	1294.4	17.3
New Castle	105.4	16.8
Newfields	235.6	5.2
Newington	1204.6	22.6
Newmarket	515.7	6.4
North Hampton	462.6	5.2
Portsmouth	873.5	8.6
Rochester	433.8	1.5
Rollinsford	408.6	8.7
Rye	1212	14.9
Seabrook	285.4	4.8
Somersworth	221.3	3.5
Stratham	666.4	6.9

From: NH's Changing Landscapes, Society for Protection NH's Forests, 1999

**Table 6-16 Non-Governmental Land Protection  
in the NHEP Study Area**

<b>Organization</b>	<b>Acreage</b>
Great Bay Resource Protection Partnership	1,200+
NH Audubon	213.5
Phillips Exeter Academy	322
Rockingham County Conservation District	217
Rockingham Land Trust	74
County Conservation District	206
Rivers Conservancy	47
UNH	2,000+
Wildlife Preserves Inc.	55

**Evaluation**

- 1    *A good history of habitat and open space protection, though the state role is declining***

**2. *Strong and growing private sector role in land acquisition and protection***

**3. *Well coordinated land and habitat protection efforts***

**4. *Variable local commitment to habitat and open space protection***

***Recommendations for Open Space and Habitat Acquisition***

- 1. The state should revive its Land Conservation Investment Program and seek new funding mechanisms to ensure priority conservation sites are protected.**
- 2. Local governments should earmark all of the Current Use tax penalty for land protection efforts.**



# Living Resource Management

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## Overview

## **Finfish Management**

## **Institutional Infrastructure**

**Table 7-1 Finfish Management Summary**

<b>Program</b>	<b>Agency</b>	<b>Description</b>
<b>FEDERAL PROGRAMS</b>		
Magnuson Fisheries Conservation and Management Act	National Marine Fisheries Service, New England Fishery Management Council, US Coast Guard	Federal management program for marine fisheries in federal waters. Enforcement is handled by the Coast Guard.
Marine Mammal Protection Act, Fish and Wildlife Coordination Act	National Marine Fisheries Service, US Fish and Wildlife Service	Allows NMFS and USFWS to provide comment on projects that
Atlantic States coastal Fisheries Cooperative Management Act, Interjurisdictional Fisheries Act	National Marine Fisheries Service, US Fish and Wildlife Service, Atlantic States Marine Fisheries Commission (ASMFC)	Federal oversight and support for interjurisdictional fisheries management. ASMFC conducts management activities through intergovernmental participation.
<b>STATE PROGRAMS</b>		
RSA 211 – Fish, Shellfish, Lobster and Crabs	NH Fish and Game Department	Management program for marine fisheries of the state.

## **Federal Programs**

### **Management Framework**

## **Regulatory Framework**

## **Non-Regulatory Framework**



## **State Programs**

### **Management Framework**

### **Regulatory Framework**

### **Non-Regulatory Framework**

## **Local and Regional Programs**

## **Non-Governmental Programs**

## **Evaluation**

***NHFG budget basis in fees and fines may limit the resources available for fisheries management***

***NH Fish and Game staff levels may limit management effectiveness.***

***Federal fisheries management has, until recently, been limited by strong resistance to regulation and weaknesses in the management framework, but may not have a significant impact on estuary species.***

### **Recommendations for Finfish Management**

1. **Ensure NH Fish and Game budgets and staff remain sufficient to manage fisheries regardless of fishing effort.**
2. **Maintain an active role in federal and interjurisdictional fisheries management to ensure regulations support New Hampshire fisheries goals.**
3. **Improve fisheries resource inventories. Gaps in stock assessments and species information exist, yet adequate management depends on this information.**

## **Shellfish Management**

### **Institutional Infrastructure**

## **Federal Programs**

### **Management Framework**

Table 7-2 Shellfish Management Summary

Program	Agency	Description
FEDERAL PROGRAMS		
Magnuson Fisheries Conservation and Management Act	National Marine Fisheries Service, New England Fishery Management Council, US Coast Guard	Federal management program for marine fisheries in federal waters. Enforcement is handled by the Coast Guard.
Marine Mammal Protection Act, Fish and Wildlife Coordination Act	National Marine Fisheries Service, US Fish and Wildlife Service	Allows NMFS and USFWS to provide comment on projects that
Atlantic States coastal Fisheries Cooperative Management Act, Interjurisdictional Fisheries Act	National Marine Fisheries Service, US Fish and Wildlife Service, Atlantic States Marine Fisheries Commission (ASMFC)	Federal oversight and support for interjurisdictional fisheries management. ASMFC conducts management activities through intergovernmental participation.
National Shellfish Sanitation Program	USDA Food and Drug Administration	This program provides the requirements for shellfish sanitation including classification of growing waters.
STATE PROGRAMS		
RSA 211 – Fish, Shellfish, Lobster and Crabs	NH Fish and Game Department	Management program for marine fisheries of the state.
RSA 143 – Sanitary Production and 14g and		

Servmeeteral watelfish sanitation inclirements for.□-121.32 0 T4 TD /F9 8.04 Tf□-0.0418 25w ( 14g a) Tj□-1LOCAL AND R

**Non-Regulatory Framework**

**State Programs**

**Management Framework**

**Regulatory Framework**

## **Non-Regulatory Programs**

### **Local and Regional Programs**

### **Non-Governmental Programs**

## **Evaluation**

***The NH shellfish program does not meet NSSP requirements for commercial shellfish growing area status, limiting the state's commercial shellfish and shellfish aquaculture options.***

***Shellfish management appears to be hampered by budget limits. There are no funds for a shellfish sanitation program, causing reduced shellfish harvest opportunities and increasing the public's frustration with resource management agencies.***

***Poor communication between FDA and the state regarding shellfish sanitation issues has hindered development of the state's shellfish industries.***

***Water quality problems are likely to limit commercial shellfish and shellfish aquaculture options until they are remediated.***

### **Recommendations For Shellfish Management**

- 1. New Hampshire should commit to developing a shellfish program that meets the requirements of the NSSP and provides for adequate management of shellfish resources. Particularly lacking are sanitary surveys and resource assessments.**
- 2. The state should commit itself to taking the steps necessary to gain approval by FDA of its shellfish program. Development of a shellfish program should be followed with a concerted effort toward NSSP approval.**
- 3. State and federal shellfish sanitation programs need to work hard to improve communication and coordination.**
- 4. Federal, state and local governments should focus more resources on identification and mitigation of pollution sources.**
- 5. Education efforts are needed regarding illegal shellfish harvesting. Such efforts might involve state, local and non-governmental partnerships.**



**6. The state should improve shellfish resource inventories.**

## **Endangered Species**

**Table 7-3 Some Threatened and Endangered Species of the Coastal Region**

<b>Plants</b>	<b>Animals</b>
Prolific knotweed	Bald Eagle
Salt marsh gerardia	Common tern
Eastern lilaeopsis	Common loon
Downy foxglove	Peregrine Falcon
Small crested sedge	Upland sandpiper
Missouri rock-cress	Piping plover
Turk's-cap lily	Eastern hognose snake
Large-spored quillwort	Four-toed salamander
Hairy brome-grass	Pied-billed grebe
Dwarf glasswort	Shortnose sturgeon (may occur)
Lined bulrush	
Marsh elder	
Shore sedge	
Robust knotweed	
Large salt marsh aster	
Stout bulrush	
Small spike-rush	
Small knotweed	

From Jones, 1997 and Short, 1992

## **Institutional Infrastructure**

**Table 7-4 Endangered Species Management Summary**

<b>Program</b>	<b>Agency</b>	<b>Description</b>
<b>FEDERAL PROGRAMS</b>		
Endangered Species Act	US Fish and Wildlife Service	Program for managing and protecting rare and threatened species. Includes strict habitat protection measures.
National Biological Survey	US Geologic Survey	Program for species and habitat data collection and dissemination.
<b>STATE PROGRAMS</b>		
Endangered Species Conservation Act (RSA 212-A)	NH Fish and Game Department	Program for management of rare wildlife species.
Native Plant Protection Act	DRED Natural Heritage Inventory	Program for management of rare plant species.
<b>NON-GOVERNMENTAL PROGRAMS</b>		
Natural Heritage Inventory Support	NH Nature Conservancy	Staff support for the state's Natural Heritage Inventory and the Native Plant Protection Act.

## **Federal Programs**

### **Management and Regulatory Framework**

### **Non-Regulatory Framework**

## **State Programs**

### **Management and Regulatory Framework**

### **Non-Regulatory Framework**

## **Local and Regional Programs**

## **Non-Governmental Programs**

### **Evaluation**

*Generally strong regulatory framework, though potential weaknesses exist.*

- 2. Limited state budgets weaken implementation and enforcement.*

*Potential strengths and weakness of the voluntary approach to plant protection make difficult to assess the overall effectiveness of the program.*

### **Recommendations for Endangered Species**

1. The state should improve staffing and resources for rare species protection to make it self-sustaining.
  
  
  
  
  
  
  
  
  
  
2. The state should improve rare species inventories.

## **Wildlife Management**

### **Institutional Infrastructure**

## **Federal Programs**

**Table 7-5 Wildlife Management Summary**

<b>Program</b>	<b>Agency</b>	<b>Description</b>
<b>FEDERAL PROGRAMS</b>		
Great Bay National Wildlife Refuge	US Fish and Wildlife Service	Research, education and refuge management for wildlife, including game and non-game species.
Migratory Bird Treaty Act	US Fish and Wildlife Service	Prevent declines in migratory bird species through international agreements. Taking protected species prohibited without special use permit.
<b>STATE PROGRAMS</b>		
Game Management	NH Fish and Game Dept.	Management of game species through time, area and gear restrictions.
Waterfowl Conservation Program (RSA 214)	NH Fish and Game Dept.	Licensing and revenue program for migratory waterfowl management.
Non-game Species Management Act (RSA 212)	NH Fish and Game Dept.	Program for management of non-game species, primarily through habitat protection.

## **State Programs**

### **Evaluation**

# **Marine Aquaculture**

## ***Institutional Infrastructure***

### **Federal Programs**

#### ***Management and Regulatory Framework***

#### ***Non-Regulatory Framework***

**Table 7-6 Aquaculture Infrastructure Summary**

Program	Agency	Description
<b>FEDERAL PROGRAMS</b>		
National Shellfish Sanitation Program	USDA Food and Drug Administration	This program provides the requirements for shellfish sanitation including classification of growing waters.
Clean Water Act	EPA	Water pollution control programs (such as permitting programs).
<b>STATE PROGRAMS</b>		
Fish, Shellfish, Lobsters and Crabs (RSA 211)	NH Fish and Game Dept.	NHFG delegated lead management agency for aquaculture (permitting, operation, processing and marketing).
RSA 143 – Sanitary Production and Distribution of Food	NH Dept. of Health and Human Services	Responsibility for monitoring of shellfish sanitation, including water for aquaculture.
<b>LOCAL AND REGIONAL PROGRAMS</b>		
Local land use regulations	Municipal governments	Regulations provide water quality protection from nonpoint sources.

## State Programs

### Management and Regulatory Framework



## **Local and Regional Programs**

## **Non-Governmental Programs**

### **Evaluation**

*The state lacks a formal policy and strategic plan for aquaculture including clarification of the roles and responsibilities of all relevant agencies.*

***The lack of NSSP approval in NH hinders shellfish aquaculture.***

***Funding is limited and probably inadequate to support expanded aquaculture and the range of potential problems that could arise.***

### **Recommendations for Marine Aquaculture**

- 1. The state needs to determine its level of commitment to aquaculture development and develop a formal policy consistent with that commitment.**
  
- 2. New Hampshire should commit to developing a shellfish program that meets the requirements of the NSSP and provides for adequate management of shellfish resources. Particularly lacking are sanitary surveys and resource assessments.**
  
- 3. The state should provide funding and staff consistent with its level of commitment to aquaculture development.**



# **Local Management Framework**

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## **Regulatory Overview**



**Table 8-1 Local Land Use Control Options**

<b>Problem/Issue</b>	<b>Local Land Use Controls</b>
<b>Non-point Source Pollution</b>	
Stormwater Runoff	Impervious surface limits, plan requirements, design and performance standards, specific design requirements, referral to guidance manuals, impact analyses.
Septic Systems	Soil based lot sizes, setbacks from surface waters and wellhead protection districts, local review procedures, siting requirements, maintenance requirements, inspections, sewer hook-up requirements.
Construction/Erosion	Plan requirements, impact analyses, design and performance standards, design requirements, referral to guidance manuals, reclamation requirements.
<b>Point Source Pollution</b>	
Wastewater Treatment Systems	Sewer hook-up requirements, prohibitions on tying residential runoff into sewer lines, industrial pre-treatment
Industrial Discharge	Comment on NPDES permits
Urban Runoff	Comment on NPDES permits
<b>Habitat Degradation</b>	
Shoreline Development	Shoreland Protection Districts: septic and structure setbacks, use restrictions, buffer requirements
Wetlands	Wetland Protection Districts: land use restrictions, septic and structure setbacks, buffer requirements, local permit requirements and review, prime wetland designation
Hydromodification	None
Open Space	Open space plans, fee simple acquisition, acquisition of conservation easements, cluster development, transfers of development rights, open space requirements for subdivision or land use change
Living Resources	None
<b>Other</b>	
Agriculture	Public health restrictions (e.g. livestock), shoreland or wetland district restrictions
Forestry	Water resources buffer zone requirements
Marinas and Boating	Siting restrictions, pumpout and sanitary facility requirements
Biosolids/Septage	Ordinances: planning requirements, guidance manuals
Junkyards	Specific district restrictions (e.g. shoreland prohibitions, etc.)
USTs	Aquifer or other resource protection restrictions
Mining/Gravel Excavation	RSA 155-E Ordinances: permit requirements, prohibitions, operational and reclamation standards
Combined Sewer Overflows	None

**Table 8-2 Land Use Regulations Summary**

Town	Master Plan	WRMPP	Septic Controls	Erosion Control	Stormwater Control	Aquifer Protection	Wetland Protection	Shoreland Protection
Dover	in progress		✓	✓	✓	✓	✓	✓
Durham	1989			✓	✓	✓	✓	✓
Exeter	1994		✓	✓	✓	✓	✓	✓
Greenland	in progress	✓	✓	✓	✓	✓		
Hampton	1996	✓		✓	✓	✓	✓	
Hampton Falls	1994	✓	✓	✓	✓		✓	
Madbury	1982		✓	✓	✓		✓	✓
New Castle	1992		✓	✓	✓		✓	
Newfields	1995		✓	✓	✓	✓	✓	✓
Newington	1990		✓				✓	
Newmarket	1994			✓	✓	✓	✓	✓
North Hampton	1989	✓	✓	✓	✓	✓	✓	
Portsmouth	1993		✓	✓	✓		✓	✓
Rochester	1993		✓	✓	✓	✓	✓	
Rollinsford	1988		✓	✓		✓	✓	✓
Rye	1986	✓	✓	✓	✓		✓	✓
Seabrook	1991		✓	✓	✓			✓
Somersworth	1989			✓	✓		✓	✓
Stratham	1985		✓	✓	✓	✓	✓	✓



**Table 8-2 (Continued) Land Use Regulations Summary**

<i>Town</i>	<i>Open Space</i>	<i>Chemicals/ Toxics</i>	<i>Gravel Excavation</i>	<i>Floodplain Ordinances</i>	<i>Impact Studies</i>	<i>Growth Mgmt</i>	<i>Biosolids Regs.</i>	<i>Marinas</i>	<i>Review Committees</i>
Dover	✓		✓	✓	✓				✓
Durham	✓	✓			✓				
Exeter	✓	✓	✓	✓	✓			✓	✓
Greenland	✓	✓	✓	✓	✓	✓	✓		
Hampton				✓		✓			
Hampton Falls			✓	✓					
Madbury	✓		✓		✓				
New Castle	✓	✓		✓					
Newfields	✓		✓						
Newington		✓							
Newmarket	✓		✓	✓					
North Hampton			✓	✓	✓				
Portsmouth	✓	✓	✓	✓					
Rochester	✓		✓	✓	✓				
Rollinsford	✓	✓	✓				✓		
Rye					✓	✓			
Seabrook		✓	✓	✓					
Somersworth	✓		✓	✓					
Stratham	✓		✓	✓					

**Table 8-3 Zone A Aquifer Protection Regulations**

<b>Town</b>	<b>Ordinance in Place</b>	<b>Typical Land Use Restrictions</b>	<b>Impervious Surface Limits</b>	<b>Other Requirements</b>
Dover	3	3	0-20%	Specifies allowed uses: (wells, dams, conservation, recreation, some forestry and agriculture)
Durham	3	3	25%	Nitrogen standards apply, hydrogeologic study required for large subdivisions (10+ lots).
Exeter	3	3	10%	Runoff must be diverted to vegetated infiltration area. Impact study required.
Greenland	3	3	20%	Nitrogen standards apply for large subdivisions. Hydrogeologic studies may be required. Allows some forestry, agriculture and nurseries.
Hampton	3	3	25-60%	Minimum lot size is 1/3 larger than underlying zone. Allows some commercial, industrial uses.
Hampton Falls				
Madbury				
New Castle				
Newfields	3	3	25%	3 acre minimum lot size, 2 if sewered. Special exceptions allowed after a finding of fact that groundwater will be protected. Agriculture and forestry allowed if will not contaminate.
Newington				
Newmarket	3	3	20%	
North Hampton	3	3		Conditional uses allowed for wide range of potentially hazardous uses.
Portsmouth				
Rochester	3	3	40%	Impervious surfaces may increase to 60% with adequate purification and recharge. Petroleum and gas storage may be allowed.
Rollinsford	3	3	10%	District defined around town wells.
Rye				
Seabrook				
Somersworth	3	3	10%	Drainage plan required to provide for on-site retention and oil and grease filtration of parking lot runoff.
Stratham	3	3	20%	Impervious limits may be reduced if stormwater plan is submitted. Min. lot sizes may increase based on soil type. Agriculture and forestry permitted, BMPs required.

## **Policies and Procedures**







**Table 8-4 Variance Review**

<b>Town</b>	<b>Year</b>	<b>Total Variances Granted</b>	<b>Variances Conditionally Granted</b>	<b>Resource Protection Variances Granted</b>	<b>Total Variances Denied</b>
Seabrook	1997	10	2	0	0
	1996	11	4	0	1
	1995	7	3	0	1
	Total	28	9	0	2
Hampton	1997	15	6	2	4
	1996	49	7	3	15
	1995	62	29	2	10
	Total	126	42	7	29
Newington	1997	4	-	1	1
	1996	31	-	2 (w/conditions)	0
	1995	14	-	2	3
	Total	49	-	5	4
Dover	1997	6	0	0	0
	1996	25	7	0	3
	1995				
	Total				

**Staff and Resources**



**Table 8-5 Planning Staff in Zone A Municipalities**

<b>Municipalities with Planning Staffs</b>	<b>Municipalities without Planning Staffs</b>
Dover	Greenland
Durham	Hampton
Exeter	Hampton Falls
Newington	Madbury
Portsmouth	New Castle
Rochester	Newfields
Somersworth	Newmarket
	North Hampton
	Rollinsford
	Rye
	Seabrook
	Stratham

## **Conservation Commissions**

**Table 8-6 Zone A Conservation Commission Activities**

<b>Town</b>	<b>Appropriated Budget</b>	<b>Role in Planning Board Review</b>	<b>Open Space Programs</b>	<b>Prime Wetlands</b>
Dover	\$0(Funds provided as needed from Planning Dept.)	Regular	LCIP, easements	N
Durham	\$2,700	Occasional	LCIP, easements, purchases	N
Exeter	\$2-3,000 (May request addtl funds for acquisition)	Regular	LCIP, easements, purchases	In process
Greenland	\$0	Occasional	LCIP, easements, gifts	N
Hampton	?	Regular		Y
Hampton Falls	\$600-800	Wetlands only	Easements	N
Madbury	\$1,000	Occasional	LCIP, easements, purchases	N
New Castle	?			Y
Newfields	\$500	Regular	LCIP, easements, gifts	N
Newington	\$3,000	Wetlands only	Purchases	N
Newmarket	\$300	Regular	LCIP, easements, purchases	Y
North Hampton	?	Regular	Easements, purchases, gifts	N
Portsmouth	\$1,900	Occasional	Easements, purchases	N
Rochester	\$1,000	Regular	Easements	In process
Rollinsford				
Rye	< \$20,000	Regular	LCIP, easements, purchases	N
Seabrook	\$700	Regular while member is on PB	Easements, tax delinquency	N
Somersworth	?	Regular	None	N
Stratham	\$500	Occasional	LCIP, purchases, subdiv. open space	N

? = Town or Conservation Commission officials unable or unwilling to divulge this information

**Table 8-7 Allocation of Current Use Tax Penalty to Conservation Fund**

<b>Zone A Towns</b>	<b>% Allocation</b>	<b>Zone B Towns</b>	<b>% Allocation</b>
Dover	0	Barrington	0
Durham	50	Brentwood	0
Exeter	0	Brookfield	0
Greenland	0	Candia	0
Hampton	0	Chester	100 (\$20,000 cap)
Hampton Falls	10	Danville	100
Madbury	50	Deerfield	0
New Castle	0	East Kingston	0
Newfields	5	Epping	0
Newington	0	Farmington	0
Newmarket	50	Fremont	0
North Hampton	100	Kensington	25
Portsmouth	100	Kingston	0
Rochester	0	Lee	50
Rollinsford	100	Middleton	0
Rye	50 (\$2,000 cap)	Milton	0
Seabrook	0	New Durham	0
Somersworth	0	Northwood	10
Stratham	0	Nottingham	0
		Raymond	25
		Sandown	25
		Strafford	0
		Wakefield	0

Note: the tax penalty varies from year to year and is therefore not available as a constant budget figure

## Towns

*Dover:*

**Durham:**

**Exeter:**

**Madbury:**

**Newington:**

**North Hampton:**

**Stratham:**



## **Recommendations**

- 1. Improve resource protection regulations***
- 2. Increase outreach to local officials on importance of resource protection regulations***
- 3. Improve development review and permit procedures***
- 4. Ensure adequate enforcement of land use regulations in all towns***
- 5. Improve outreach for developers and landowners***

6. *Develop long term monitoring of permit conditions*
7. *All construction permits should receive more than one level of review*
8. *Review variance practices*
9. *The DES Shoreland Protection Program should reconsider its reliance on local governments for enforcement of state regulations*
10. *Consider watershed based planning agreements*
11. *Examine land use regulations in the Zone B towns*
12. *Increase the number of circuit rider planners to improve assistance to towns without planning staff*

## References

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- Method for Comparative Evaluation of Nontidal Wetlands in New Hampshire*
- Shoreline protection act is put to the test* \_\_\_\_\_
- Coastal degradation and fish population losses*  
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- Wetland Mitigation Evaluation Study.*
- Buffers for Wetlands and Surface Waters: A Guidebook for New Hampshire Municipalities.*
- Method for the Evaluation and Inventory of Vegetated Tidal Marshes in New Hampshire.*
- Wetlands losses in the United States: 1780's to 1980s.*
- Vital Signs: Economic and Social Indicators for New Hampshire, 1992-1995*
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- Final Report, Baboosic Lake Study, Amherst and Merrimack, NH.*
- Microbial contamination of the subsurface*  
\_\_\_\_\_
- Evaluation.*
- Framework for Action: Galveston Bay Management*
- Fundamentals of Urban Runoff Management: Technical and Institutional Issues.*
- Coastal Protection Program: Workshops in Innovative Management Techniques for Estuaries, Wetlands, and Near Coastal Waters.*

*A Technical Characterization of Estuarine and Coastal New Hampshire: A draft report submitted to the New Hampshire Estuaries Project.*

*Assessment of non-point source pollution in the Oyster River watershed.*

*Assessment of bacterial and nutrient contamination from subsurface disposal systems in the Seacoast area*

*The Regulation and Management of Casco Bay: A Report to the Casco Bay Estuary Project*

*Assessment of atmospheric Non-Point Source Nitrogen Input to the Great Bay Watershed and Estuary.*

*New Hampshire Coastal Nonpoint Pollution Control Progra*

*State of New Hampshire: 1996 Section 305(b) Water Quality Report.*

*Health risks associated with the potential for groundwater contamination by pesticides in New Hampshire*

*An Overview of Recycling in New Hampshire.*

*Needs Assessment for Local Decision Makers: A Report to the Great Bay National Estuarine Research Reserve.*

*The Economics of Residential Curbside Recycling in Durham, North Carolina.*

*New Hampshire Aquaculture: Evaluation of the Status of the Industry and an Economic Evaluation of Regulatory Compliance.*

*New Hampshire's Changing Landscape: Population Growth, Land Use Conversion, and Resource Fragmentation in the Granite State.*

*valuation of Restorable Salt Marshes in New Hampshire.*

*Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters.*

## Abbreviations and Acronyms

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## **Program Survey Sheet**

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*Name of Program:*

*Problem(s) Addressed:*

*Organization (Division or office name):*

*Contact Person/phone #:*

*Program or Project:*

*Description (purpose) -*

*Target Audience -*

*Function -*

*Is this Program or Project Ongoing? -*

*Regulatory Authorities*

*Geographic Jurisdiction -*

*Funding:*

*Souce -*

*Budget -*

*Program Budget -*

*Administration:*

*Structure/Process -*

*Links to Cooperating Agencies -*

*Staff -*

## Questions

*Does this organization have any offices or facilities in the Great Bay or Hampton/Seabrook area?*

*Does your organization have sufficient legal authority to effectively carry out its responsibilities under this program or project?*

*If not, what additional authorities would help?*

*Are there any policies or activities that the organization or office would like to adopt but doesn't because there are inadequate resources to implement them? If so, what are they?*

*Are there activities that the organization could do better if it had additional resources? If so, what are they and what resources would be most useful (staff, budgets, equipment, etc.)?*

*Do any other organizations duplicate any of your activities? If so, which ones?*

*Do any other organizations impede your activities or your effectiveness? If so, which ones?*

*Are you able to improve your effectiveness through cooperation with other organizations? How?*

*Does your agency have any qualitative measures of success or cost-effectiveness with respect to this program or project? (e.g. compliance rates, pollution reduced per dollar spent, etc.)*

*On a scale of 1 to 6, how would you rate the political climate in which your agency operates?*

*Government*

*Very Hostile    1            2            3            4            5            6    Very Supportive*

*Public*

*Very Hostile    1            2            3            4            5            6    Very Supportive*

*Are there other programs or projects that we should be aware of?*



# New Hampshire Model Ordinances for Local Land Use Control

<b>Septic Systems/Sewage</b>	<b>No Model</b>
Soil-based lot sizes (for septic)	
Siting Requirements	
Other Requirements	
Local Inspections	
Erosion/Sediment Control (from NH Assn. of Conservation Districts and Water Quality and Urban Conservation Committee, 1997)	E&SC (and stormwater management) plan shall be required when one of the following applies: disturbance of 20,000 ft <sup>2</sup> ; construction or reconstruction of street or road; subdivision of 4+ lots; disturbance of critical areas. PB may waive requirements of all or part of plan if deemed unnecessary because of size, character or natural conditions of a site. Minimum plan requirements: site description including soils from National Cooperative Soil Survey map (HISS may only be used for design purposes); temporary and permanent E&SC BMPs. Applicant bears responsibility for installation, construction, inspection and disposition of required measures. PB may require bond or other security for construction and installation of measures. Conditional approval of plan needed before activities start. Plans shall receive technical review by local conservation district or other professional consultant, at expense of applicant. PB may require routine inspections by its designated agent, and fees may be assessed of the owner for costs of inspections.
Soil Exposure Limits	Disturbed areas remaining idle for more than 30 days shall be stabilized.
Minimize disturbance	Disturbed areas shall be kept to minimum. Whenever practical, natural vegetation shall be retained, protected or supplemented. Stripping of vegetation shall be done so as to minimize erosion.
Reclamation requirements	

Design Standards	Shall meet BMPs set forth in "Green Book," RCCD, and amendments. E&SC controls in place before soil disturbance. Sediment in runoff shall be trapped and retained within the project area using approved measures. Wetland and surface waters shall be protected from sediment. Off site surface water and runoff from undisturbed areas shall be diverted away from disturbed areas where feasible or carried non-erosively through the project area. Integrity of downstream drainage systems shall be maintained. Temporary measures removed after final site stabilization. Disturbance from removal permanently stabilized within 30 days. Maintenance of measures runs with deed.
<b>Stormwater Management (from NH Assn. of Conservation Districts and Water Quality and Urban Conservation Committee, 1997)</b>	(E&SC and) Stormwater management plan shall be required when one of the following applies: disturbance of 20,000 ft <sup>2</sup> ; construction or reconstruction of street or road; subdivision of 4+ lots; disturbance of critical areas. PB may waive requirements of all or part of plan if deemed unnecessary because of size, character or natural conditions of a site. Applicant bears responsibility for installation, construction, inspection and disposition of required measures. PB may require bond or other security for construction and installation of measures. Conditional approval of plan needed before activities start. Plans shall receive technical review by local conservation district or other professional consultant, at expense of applicant.
Specific Requirements	Priority given to preserving natural drainage systems including perennial and intermittent streams, wetlands, swales and drainage ditches for conveyance of runoff leaving the project area.
Design standards	Post-development peak runoff rate not to exceed pre-development rate for the 2-year, 24 hour storm event and for additional storm events as specified in design criteria in Green Book. Measures shall, at a minimum, meet BMPs set forth in Green Book. Maintenance of measures runs with deed.
Impervious Limits	
<b>Aquifer Protection Districts</b>	No Model – Standards currently being developed
District Limits	
Impervious limits	
Land use restrictions	
<b>Wetland Protection Districts</b>	No Model – Standards currently being developed
Land Use Restrictions	
Septic setbacks	
Buffers/building setbacks	
<b>Shoreland Protection Districts (Model ordinance, Office of State Planning, 1994)</b>	Prevent and control water pollution, protect important fish, bird, and wildlife habitat, protection of wetlands and their important natural functions, etc... Permitted Uses - Marinas with a minimum frontage of 300ft and 25ft for each addition two slips over 12, provided an EIS is submitted containing mitigation measures, measures to prevent leakage or spills of fuels, waste products or other pollutants; decks, wharves, boat ramps and swimming floats and other water dependent structures; additional water dependent structures approved as special exceptions and designed to minimize impacts.
District limits	All land located within 250 feet of the reference line (the natural mean high water of natural fresh water bodies, the water line at full pond as determined by the top of an impoundment structure, and the highest observable tide line defining the furthest landward limit of tidal flow excluding storm events).

Land Use Restrictions	Prohibitions: establishment or expansion of salt storage sheds, auto junk yards, solid or hazardous waste facilities; use of fertilizer except lime and/or wood ash on lawns or grass areas on residential properties; bulk storage of chemicals; bulk storage of petroleum products or hazardous materials (except residential fuel oil); sand and gravel excavation; processing of excavated materials; dumping of snow from areas outside of the district. Restrictions: water dependent structures to be approved by wetlands board; public water supply and sewage treatment facilities, hydorelectric, public utility lines and associated structures only as permitted by DES; existing solid waste facilities may remain provided they don't cause degradation beyond the permit area; solid waste facilities may erect accessory structures and conduct other activities provided no solid waste is placed within 250 feet of the reference line of public waters.
Erosion/Sediment Controls	All construction and/or development activities shall incorporate E&SCs as outlined in the "Green Book." Disturbances greater than 50,000 ft2 require site-specific permits from DES.
Septic setbacks	Subsurface waste disposal systems must be designed in accordance with DES design rules. Leaching portions of septic systems must be set back from the reference line (shoreline) 125 feet for porous sand and gravel with a perc rate faster than 2 minutes per inch, 100 feet where soils have restrictive layers within 18 inches of natural soil surface, 75 feet for other soils. Adjacent to rivers, DES may approve greater setbacks than the 75 foot minimum.
Primary structure setback	50ft from the reference line (shoreline). Accessory structures other than automobile garages may be located within 50ft provided they are consistent with vegetated buffer. Buildings should be sited so as to minimize impact on habitat and the watershed. Structures shall be limited to 2 1/2 stories or 35ft in height measured from average ground level around the structure to the highest point on the roof excluding chimneys.
Vegetated buffer requirements	A natural woodland buffer shall be maintained within 150 feet of the reference line (see District Limits above) for protecting water quality. Not more than 50% of basal area of trees and a maximum of 50% of saplings may be removed for any purpose in a 20 year period. Replacement planting with native or naturalized species may be permitted to maintain the 50% level. Vegetation removed for construction of building and accessory structures, septic systems, roadways, pathways and parking areas shall be excluded from this cutting limit. Dead, diseased, unsafe noxious or fallen trees, saplings, shrubs or ground cover may be removed. Stumps within 50 feet of reference line shall be left intact.
Impervious limits	20% for all impervious materials

Density limits	<p>Minimum lot size for new lots using on-site septic systems will be based on soil type and shall be determined in accordance with NH Code, using the standards of the USDA SCS National Cooperative Soil Survey. Minimum frontage for lots with on-site septic systems is 150ft. Cluster development may be permitted provided density does not exceed soil based lot sizes above plus 2% for the development. 60% of total parcel shall remain permanent open space as a conservation easement. Non-conforming lots of record may be used for single family residential development. If the site won't accommodate septic provisions above, the owner shall be encouraged to acquire additional land or permanent easement to land for this purpose as far as practicable or shall be limited to 300 gallons per day of sewage loading. Modifications to existing non-conforming structures or lots that result in increases in sewage loading (such as additional bedrooms) shall require approval by DES. Non-conforming uses that are discontinued for one year or more will no longer be allowed.</p>
Agricultural requirements	Agriculture activities and operations are exempt from the above provisions provided they are in conformance with the most recent USDA SCS and Cooperative Extension Service best management practices.
Other	No Models
Open Space	
Chemical/Toxics Control	
Excavation Regulations	
Flood Control	
Impact Studies	
Growth Management Ordinances	
Biosolids Ordinances	
Marina Requirements	
Review Committees	
Miscellaneous	

## Selected Comments from Interviews

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### Information Needs

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## **Management Issues**

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